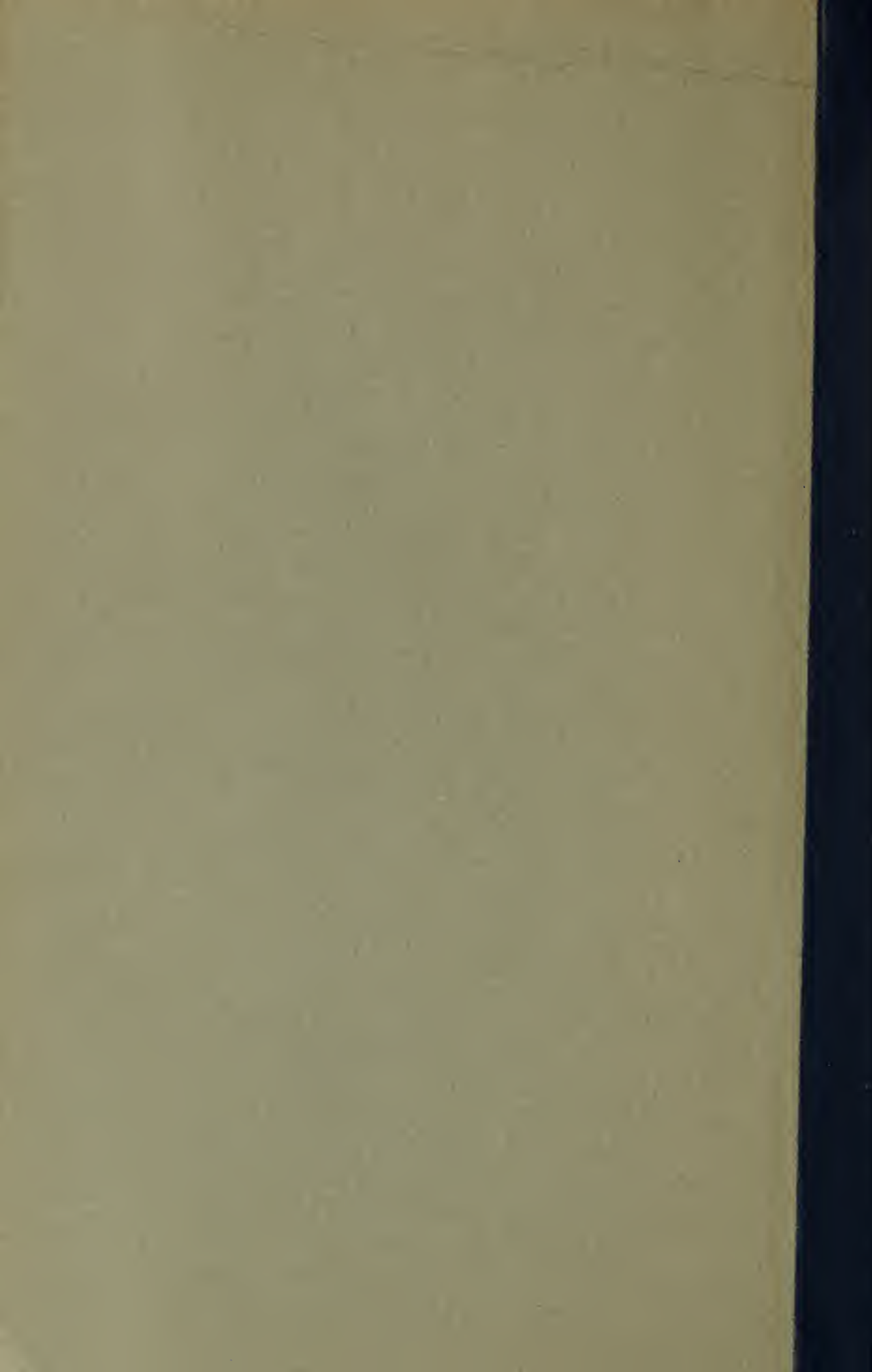


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JULY, 1876.

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BUFFALO, N. Y.

PUBLISHED BY THE BUFFALO DENTAL MANUFACTURING CO.



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## Chilian Compliment to a Philadelphia Manufacturer.

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“The authorities of the Chilian International Exhibition, at Santiago, have awarded to H. D. JUSTI, of Philadelphia, a first-class Medal and Diploma for his collection of Artificial Teeth exhibited there in 1875. Medal and Diploma are now in his possession.”



# THE DENTAL ADVERTISER.

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VOL. VII.—BUFFALO, N. Y., JULY, 1876.—No. 3.

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## MERCURY—ITS USE AND ABUSE.

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Read before the 8th District Dental Society of New York, May, 1876.

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Having had for many years very exceptional opportunities for obtaining information on this subject, the following points have been noted by me as bearing on the question whether mercury is or is not admissible in filling materials. There is undoubtedly a strong prejudice against it, and this prejudice is to a certain and very limited extent well founded, so long as the usual practice of most operators is adhered to. A great number of experiments have proved most conclusively in every case that there is with all alloys used for amalgams, one definite maximum proportion of mercury which cannot be exceeded without serious damage to the results. So clearly is this shown, both in theory and practice, that a compound which is a permanent and reliable filling material, may be rendered, by excess of mercury alone, a temporary and unsatisfactory one. The proofs of this may be seen daily in practice, provided the proportions of metals are registered, and the plugs watched at intervals.

Taking this as a point which I have proved repeatedly with every alloy which has come under my notice, let us consider the following serious fact. I have been in the habit of purchasing amalgam waste for refining, and, taking an assay of the metals, I have never found in any one sample less than three times the proportion of mercury necessary either for convenience in use or good results, and I have more than once found from seven to ten times the proper proportion.

It has been frequently stated that the mercury in amalgams is either

soluble or separates in some way, causing constitutional mischief. This may possibly be the case (although not at all probable) if we use what may be called a weak solution of filings in mercury, instead of using the mercury simply as a means of obtaining a welding surface. If we use it in the latter way, there are few alloys from which the mercury will entirely evaporate, even at a clear red heat continued for some time. I have endeavored to evaporate the mercury perfectly from a small quantity of a simple alloy, by exposing it to a bright red heat in an open crucible for one hour, and without success. I have also placed weighed plugs in a rapid current of high pressure steam for months continuously, and found, not a loss in weight, but an increase from oxydation. An exception may perhaps be taken with regard to an alloy of cadmium, which has recently been introduced, notwithstanding the universal condemnation of this metal many years ago. I have not used this alloy in the mouth, but find in acids that the mercury appears to be the only metal which is not acted on, and that it collects in a fluid or semi-fluid film on the surface of the plug. This alloy is hardly worth further consideration, as there is little doubt but that its inherent faults will rapidly put a stop to its use. If they do not, makers of amalgams have much both to learn and unlearn.

When I say there is one definite proportion of mercury which cannot be exceeded, it must not be understood that the same proportion suits all alloys. On the contrary, some metals and alloys will hold and combine with an amount of mercury sufficient to render permanently fluid or soft many other alloys which work well with a smaller proportion. Take for instance precipitated silver, which works fairly with a proportion of mercury nearly three times its weight. Take the same silver and alloy it with an equal weight of grain tin, and it will require then about one-tenth of the quantity it previously combined with, and anything like the proportion required by precipitated silver would simply make a permanently brittle and soft mass, worthless for even the most temporary plugs. The addition of tin brings in other faults which condemn the alloy for good work, but which it is not my purpose to discuss at present.

If we take precipitated palladium as it has appeared in the market recently, along with a simple theoretical test, we shall, I think, get at the law which rules the proportion of mercury which can be safely used. Palladium, as we have known it for many years, has been always referred to as the amalgam above all others which has proved itself thoroughly reliable for almost an unlimited time in the mouth, its excessive cost only limiting its use. This takes up and combines rapidly and perfectly with a very large proportion of mercury (twice or three times its weight), and yet

we have had recently, samples of palladium, pure and apparently the same which have turned out worthless in the mouth. The only point which enables the good and the bad to be distinguished being that the latter is slow in hardening. Now if we take any compound which is slow in hardening, and pack it in a cavity, in the presence of moisture, we shall find that a capillary film of liquid gradually forces its way down the sides, lifting and remoulding the plug, until its adaptation is more or less completely destroyed; and we find by a further test, that in the total absence of moisture, *i. e.*, when the plug is kept dry until hard, this does not take place, and the question at once resolves itself into two points. That any and every soft plug shall be completely protected from contact with the smallest trace of moisture until it is perfectly hard, or that our amalgams shall be used in such a manner that they are nearly hard when inserted, and that they shall contain so small a proportion of mercury that they will be practically quite hard before moisture is allowed to come in contact with them. It is now about three years since this theory of mechanical interference of moisture was first raised by me, and my experience both in and out of the mouth has fully and entirely confirmed it in every case. That it is possible to make an alloy which, under certain conditions, will give off mercury, I have proved, but such alloys as these do not, I think, exist in any form which is practically used in the mouth.

I have more than once condemned the practice of mixing with excess of mercury and squeezing. It would appear from a number of experiments that the principal if not the only objection to this is, that it very greatly lengthens the time required for hardening, and therefore entails more or less damage so far as the mechanical adaptation to the cavity is concerned.

We must, therefore, to obtain reliable results, limit our proportion of mercury to the smallest possible quantity with which the alloy can be worked, suffering inconvenience from deficiency rather than consulting our ease by adding a little excess; taking as a rule admitting of no exception that if a soft plug is left in contact with a trace of moisture, its failure in one or all important points is a question of time only. In using gold or tin for plugging, the mechanical interference of moisture is absolutely nothing, as when a plug is finished it has at once its permanent hardness, which enables it to resist any attempt at remoulding by the pressure of capillary films of moisture. A gold or tin plug, be it good, bad or indifferent, stands unchanged, any failure taking place by alteration or decay of the tooth substance; an amalgam improperly used, on the contrary, will commence the failure by its own alteration of shape as soon as the operator has left it.

It is an easy matter to take such precautions as are necessary to ensure the best possible results, with perfect uniformity; the selection of any special alloy becomes then a simple matter. If the alloy itself is tested and uniform in properties, there will be no variation in results, and the theoretical tests will correspond precisely with the results in the mouth in every case. An amalgam may pack well and retain its form perfectly in a dry glass tube, and yet be worthless in ordinary practice, as it may fail from want of power to retain its form in the presence of moisture. If it will retain its adaptation if packed entirely under water, it may be safely used in the mouth provided no objectionable metals, such as zinc, cadmium, etc., are contained in it.

THOS. FLETCHER.

## DENTAL PATENTS.

In April, 1870, we commenced the publication of the names and claims of patents relating to dentistry as items of news. That they have been "items of news," we have gratifying evidence, especially from the inventive portion of the profession who have been greatly assisted by the information contained in the quarterly list.

Some curiosity having been expressed as to the number of dental patents granted since the commencement of their publication in the *Dental Advertiser*, we have accordingly compiled the following list from the pages of the *Advertiser*, which comprises patents issued from April 19, 1870, to August 17, 1875, being for a period of five years and four months.

The number of dental patents issued:

From April, 1870, to April, 1871, was	35
" " 1871, " 1872, "	42
" " 1872, " 1873, "	40
" " 1873, " 1874, "	29
" " 1874, August, 1875, "	63
Total,	209

### LIST OF DENTAL PATENTS, FROM APRIL, 1871, TO AUGUST, 1875.

Apr. 19, 1870.	Artificial Teeth,	J. H. Wood, Lebanon, Ohio.
May 30, 1870.	Artificial Teeth, mold for,	Eli Sweet, Whitney Point, N. Y.
May 17, 1870.	Artificial Teeth,	J. W. Hollingsworth, Mount Vernon, Ind.
May 31, 1870.	Artificial Teeth,	J. A. Bidwell, Chicago, Ills.
Oct. 25, 1870.	Artificial Teeth, fastening to Metallic Plate,	H. B. Hale, Rockford, Ill.
Aug. 22, 1871.	Articulators,	L. Hoffstadt, Philadelphia, Pa.
Sept. 26, 1871.	Artificial Teeth, attaching to pyroxyline plate,	J. A. Troutman, Seneca Falls, N. Y.

- Oct. 31, 1871. Artificial Teeth, . . . . . T. A. D. Foster, Philadelphia, Pa.  
 Jan. 20, 1872. Artificial Teeth, . . . . . C. H. Mack, Portland, Oregon.  
 Apr. 23, 1872. Attaching pyroxyline base to Artificial Teeth, M. Newton, Boston, Mass.  
 May 7, 1872. Artificial Dentures, . . . . . F. B. Brown, Palmyra, N. Y.  
 May 7, 1872. Artificial Teeth, apparatus for attaching to pyroxyline base, A. E. Pursell, Indianapolis, Ind., and J. A. Troutman, Seneca Falls, N. Y.  
 May 14, 1872. Artificial Teeth, bases for, . . . . . F. Hickman, Reading, Pa.  
 Feb. 3, 1874. Apparatus for obtaining the Bite, . . . E. O. Smith, Albany, Oregon.  
 Oct. 7, 1873. Artificial Teeth, . . . . . W. C. Tracy, Brooklyn, N. Y.  
 Nov. 4, 1873. Artificial Crown for Teeth, . . . J. B. Beers, San Francisco, Cal.  
 Nov. 18, 1873. Artificial teeth, method of fastening, G. T. C. Reese, Brooklyn, N. Y.  
 July 14, 1874. Apparatus for transmitting motion (reissued), A. H. Kennedy, Benzonia, Mich.  
 Nov. 3, 1874. Attaching artificial teeth to plates, . . B. J. Field, Leaksville, N. C.  
 Nov. 24, 1874. Amalgams, . . . . . S. S. Southworth, Niagara Falls, N. Y.  
 Feb. 23, 1875. Artificial teeth, securing pins to, . . O. S. Bixby, Syracuse, N. Y.  
 April 13, 1875. Articulators, . . . . . C. D. Cheney, Canandaigua, N. Y.  
 June 4, 1872. Base for dental purposes, . . . . . V. Smith, Schenectady, N. Y.  
 Aug. 11, 1874. Brackets for Chairs, . . . . . G. W. Gray, Albany, Oregon.  
 Sept. 1, 1874. Blow pipes, . . . . . F. S. Barber, and O. J. Price, Oxford, Mich.  
 Jan. 5, 1875. Burring tool, . . . . . F. Hickman, Reading, Pa.  
 Apr. 20, 1875. Bibs, dental, . . . . . R. Horton, Cleveland, Ohio.  
 May 3, 1870. Chair, dental, . . . . . Michael Leidecker, Rochester, N. Y.  
 June 21, 1870. Chair, dental, . . . . . C. M. Adams, Canton, Miss.  
 July 26, 1870. Collodion, process for coating with, J. A. McClelland, Louisville, Ky.  
 Aug. 16, 1870. Chair, dental, . . . . . W. M. Butler, Louisville, Ky.  
 Nov. 1, 1870. Compound for cleansing the teeth, . . W. M. Tandy, Carrollton, Ky.  
 June 19, 1871. Cleansing teeth, composition or soap for, J. O. Draper, Pawtucket, R. I.  
 June 27, 1871. Chair, dentists', . . . . . A. Gebhard and J. Blodan, Indianapolis, Ind.  
 Nov. 14, 1871. Chair, dentists', . . . . . O. C. White, Hopkinton, Mass.  
 Oct. 15, 1872. Chair, dentists', . . . . . F. J. Coates, Cincinnati, Ohio.  
 Apr. 29, 1873. Clamp for dental purposes, . . . C. E. Blake, San Francisco, Cal.  
 May 26, 1874. Clamp, coffer dam, . . . . . C. Bancroft, Brooklyn, N. Y.  
 July 21, 1874. Celluloid molding, . . . . . R. F. Hunt, Washington, D. C.  
 Aug. 11, 1874. Chair, dentists', . . . . . A. W. Morrison, St. Louis, Mo.  
 Jan. 5, 1875. Clamp, rubber dam, . . . . . F. Hickman, Reading, Pa.  
 Jan. 19, 1875. Chair, dentists', . . . . . G. W. Archer, Rochester, N. Y.  
 Feb. 9, 1875. Cabinets for dentists, . . . . . T. Cogswell, Boston, Mass.  
 May 4, 1875. Celluloid, process and apparatus for molding, R. F. Hunt, Washington, D. C.  
 June 22, 1875. Clamps for rubber dam, . . . . . D. Palmer, New York.  
 Aug. 17, 1875. Cements, dental, . . . . . M. T. Labbe, Paris, France.  
 Feb. 14, 1871. Dentifrice, . . . . . Oliver Danforth, Bibb Co., Ga.  
 June 4, 1872. Dentifrice, . . . . . W. H. Farnham, Sparta, Wis.  
 Aug. 8, 1871. Drills, dental, . . . . . G. V. Black, Jacksonville, Ills.  
 Aug. 22, 1871. Drills, dental, . . . . . A. Hartman, Murfreesborough, Tenn.  
 Aug. 22, 1871. Drills, dental, . . . . . C. Poor, Dubuque, Iowa.  
 Feb. 13, 1872. Drills, dental, . . . . . W. S. Elliott, Goshen, N. Y.  
 May 28, 1872. Drills, dental, . . . . . W. M. Reynolds, New York.  
 June 4, 1872. Drills, dental, . . . . . J. J. Ross, Memphis, Tenn.  
 Jan. 21, 1873. Drills, dental, . . . . . M. D. Gallagher, Savannah, Ga.  
 Feb. 4, 1873. Depurator for the teeth and gums, . . J. D. Wingate, Carbondale, Pa.  
 Apr. 1, 1873. Drill, diamond pointed, . . . . . J. P. Gillespie, Louisville, Ky.  
 May 20, 1873. Drill, dental, . . . . . J. W. Baxter, Vevay, Ind.  
 Feb. 24, 1874. Drill, dental, . . . . . J. B. Morrison, Brooklyn, N. Y.  
 Dec. 2, 1873. Drilling Machine, . . . . . C. E. Edwards, Philadelphia, Pa.  
 Mar. 31, 1874. Drill, dental, . . . . . F. Hickman, Reading, Pa.  
 June 2, 1874. Drill, dental, . . . . . W. R. Nütz, Philadelphia, Pa.  
 Nov. 10, 1874. Drill, dental, hand-piece for . . . W. A. Johnston, Brooklyn, N. Y.  
 Jan. 26, 1875. Disks, apparatus for protecting, etc., . E. T. Starr, Philadelphia, Pa.  
 Apr. 13, 1875. Dental Pots (Vulcanizer), . . . . . C. A. White, Philadelphia, Pa.

- June 15, 1875. Dentifrice, . . . . . A. C. Dung, New York  
 Feb. 7, 1871. Engine, dental, . . . . . J. B. Morrison, St. Louis, Mo.  
 Nov. 12, 1872. Engine, dental, (reissue), . . . . J. B. Morrison, St. Louis, Mo.  
 Apr. 29, 1873. Engine, dental, . . . . . C. M. Curtis, Philadelphia, Pa.  
 Apr. 7, 1874. Engine, dental, rotary tool for, . . . F. Hickman, Reading, Pa.  
 Apr. 7, 1874. Engine, dental, . . . . . D. W. Clancy, Cincinnati, Ohio.  
 June 2, 1874. Engine, dental, . . . . . W. W. Evans, Washington, D. C.  
 July 21, 1874. Engine, dental, . . . . . N. Stow, Binghamton, N. Y.  
 Dec. 8, 1874. Engine, dental, flexible power conveyor for, E. T. Starr, Philadelphia.  
 Dec. 8, 1874. Engine, dental, . . . . . N. Stow, Binghamton, N. Y.  
 Dec. 29, 1874. Engine, dental, hand-pieces for, . J. W. Gilbert, Philadelphia, Pa.  
 Dec. 22, 1874. Engine, dental, flexible shafts for, . E. T. Starr, Philadelphia, Pa.  
 Dec. 22, 1874. Engine, dental, flexible shafts for, . E. T. Starr, Philadelphia, Pa.  
 Jan. 19, 1875. Engine, dental, hand-pieces of, . J. W. Gilbert, Philadelphia, Pa.  
 Jan. 26, 1875. Electro magnetic dental tools, . G. F. Green, Kalamazoo, Mich.  
 Mar. 2, 1875. Engine, dental, . . H. M. Edson and R. L. Evans, Toledo, Ohio.  
 Aug. 17, 1875. Engine, dental, electro magnetic, . . . J. Bishop, Sugartown.  
 Aug. 2, 1870. Fracture of lower jaw, treatment of, John Stowe, Lawrence, Mass.  
 Feb. 9, 1871. Filling teeth, preparation of platinum for, E. G. Kearsing and Le-  
   onzo Kearsing, Spring Valley, N. Y.  
 May 2, 1871. Fillings, securing dental, . . . C. H. Mack, Portland, Oregon.  
 May 23, 1871. File Holder and Polisher, . . . H. Lawrence, New Orleans, La.  
 Dec. 5, 1871. Forceps, improvement in, . . . N. A. Durham, Duquoin, Ill.  
 Dec. 12, 1871. Forceps, improvement in, . . . N. A. Durham, Duquoin, Ill.  
 Dec. 19, 1871. Forceps, improvement in, . . . L. G. Harkins, Newport, N. Y.  
 Dec. 26, 1871. Forceps, improvement in, . . . P. N. Jacobus, Montague, N. J.  
 Oct. 22, 1872. Forceps, improvement in, . . . J. D. Chevalier, New York.  
 Apr. 8, 1873. Flask, dentists', . . . . . C. Bailey, Kingston, N. C.  
 May 20, 1873. Filling, porcelain block for, . . . C. H. Mack, New York.  
 Dec. 9, 1873. Filling, dental, . . . . . C. E. Blake, San Francisco, Cal.  
 Dec. 30, 1873. Filling for decayed teeth. . . . C. E. Blake, San Francisco, Cal.  
 Oct. 7, 1873. Filling, device for retaining, . . . E. Osmond, Cincinnati, Ohio.  
 Dec. 2, 1873. Forceps, . . . . . C. G. French, Springfield, Ills.  
 May 26, 1874. File, . . . . . E. Maynard, New York.  
 June 30, 1874. Flexible Shaft, . . . . . N. Stow, Binghamton, N. Y.  
 Nov. 3, 1874. Files, . . . . . W. F. Johnston, Brooklyn, N. Y.  
 Dec. 15, 1874. Filling teeth, compound for, . . . C. Kellnitz, New York.  
 Feb. 2, 1875. Flasks, for rubber, . . . . . S. D. Palmer, Toledo, O.  
 Apr. 13, 1875. Flasks, dental, . . . . . C. A. White, Philadelphia, Pa.  
 May 25, 1875. Flasks, dental, . . . . . W. C. Tracy, Brooklyn, N. Y.  
 June 22, 1875. Forceps, . . . . . A. Engel, Geestemunde, Prussia.  
 July 20, 1875. Forceps, . . . . . N. A. Dunham, Hartford, Conn.  
 Aug. 3, 1870. Gas Regulator, . . . . . James M. Osgood, Summerville, Mass.  
 Nov. 1, 1870. Gold Foil, manufacture of, . . . U. K. Mayo, Boston, Mass.  
 Dec. 19, 1871. Gold Foil, process for preparing, E. G. & L. Kearsing, Spring Val-  
   ley, N. Y.  
 Apr. 30, 1872. Gold, for dental purposes, . . . R. S. Williams, New York.  
 May 14, 1872. Gold, for dental purposes, . . . Geo. J. Pack, New York.  
 Apr. 8, 1873. Gold, preparing for dentists, . . . R. S. Williams, New York.  
 July 5, 1873. Gold, manufacture of, . . . . . R. S. Williams, New York.  
 Apr. 21, 1874. Gold Foil (re-issue), . . . . . R. S. Williams, New York.  
 Aug. 25, 1874. Gold leaf, . . . . . C. E. Blake, San Francisco, Cal.  
 Apr. 6, 1875. Gas Burner, laboratory, . . . C. D. Cheney, Canandaigua, N. Y.  
 Nov. 8, 1870. Head Rest, . . . . . J. S. Bartlett, Warsaw, N. Y.  
 Nov. 22, 1870. Head Rest, . . . . . R. F. Hunt, Washington, D. C.  
 Oct. 17, 1871. Head Rest, . . . . . T. D. Thompson, Providence, R. I.  
 Dec. 31, 1872. Head Rest, . . . . . W. W. Evans, Washington, D. C.  
 July 5, 1870. Impression Moulds, . . . . . W. C. Smith, Warrensburg, Mo.  
 Apr. 11, 1871. Instrument Stand, . . . . . J. J. Ross, Hernando, Miss.  
 Aug. 8, 1871. Instruments, improvement in, . . C. H. Mack, Portland, Oregon.  
 Jan. 20, 1874. Impression Cup, . . . . . Geo S. Touke, Westminster, Md.

- Jan. 20, 1874. Inhaler and dental prop, . . . J. H. Vickers, Norwich, Conn.  
 Oct. 21, 1873. Instrument, dental (re-issue), . . . I. A. Salmon, Boston, Mass.  
 July, 7, 1874. Impressions, compounds for, B. H. Teague, Aiken, and H. Parker, Edgefield, N. C.  
 Jan. 12, 1875. Instruments, hand pieces for, . . . J. W. Gilbert, Philadelphia, Pa.  
 Jan. 10, 1871. Lathe, dental, . . . E. C. Rishel, White Haven, Pa.  
 May 31, 1870. Mallet, dental, . . . J. A. Bidwell, Chicago, Ills.  
 Sept. 6, 1870. Maxillary Compress, . . . C. E. Davis, St. Helena, Cal.  
 Dec. 9, 1873. Metallic foil, . . . C. E. Blake, San Francisco, Cal.  
 Aug. 11, 1874. Mirrors, . . . W. F. Johnston, Brooklyn, N. Y.  
 Apr. 20, 1875. Mallets, dental, . . . J. T. Codman, Boston, Mass.  
 May 25, 1875. Mirrors, dental, . . . T. Cogswell, Boston, Mass.  
 Aug. 3, 1875. Mallets, dental, . . . I. A. Salmon, Boston, Mass.  
 Aug. 17, 1875. Mallets, dental, . . . G. W. Levin, Chicago, Ills.  
 Nov. 14, 1871. Nitrous Oxide, apparatus for liquefying, W. F. Johnston and W. A. Johnston, Brooklyn, N. Y.  
 Nov. 14, 1871. Nitrous Oxide, method of compressing and liquefying, W. F. Johnston and W. A. Johnston, Brooklyn, N. Y.  
 Apr. 19, 1870. Plates, apparatus for casting, . . . I. A. Loomis, Carthage, Ills., and C. T. Moll, San Francisco, Cal.  
 June 28, 1870. Pin, dental, . . . Peter Craus, Jr., Philadelphia, Pa.  
 Oct. 11, 1870. Plates, castings of, . . . J. V. L. Feemster, Greencastle, Ind.  
 Jan. 24, 1871. Plates, atmospheric pressure attachment for, John B. Beers, San Francisco, Cal.  
 Jan. 31, 1871. Plates, mode of forming air chambers in, M. A. Boughton, Norwalk, Conn.  
 Mar. 28, 1871. Plate, from Pyroxyline, I. S. Hyatt, J. W. Hyatt, Jr., and J. E. Perkins, Albany, N. Y.  
 Mar. 7, 1871. Plate, atmospheric, dental (re-issue), N. T. Fulsom, Laconia, N. H.  
 Apr. 8, 1871. Plate, dental, manufacture of, from pyroxyline, J. Brockway, Albany, N. Y.  
 Apr. 25, 1871. Plate, dental, preparation and application of pyroxyline for, R. H. Winsborough, St. Louis, Mo.  
 June 13, 1871. Plate, dental, atmospheric pressure attachment for, J. P. Gillespie, San Francisco, Cal.  
 Aug. 29, 1871. Plates, dental, . . . S. Purvins and H. Smith, Salem, Oregon.  
 Sept. 26, 1871. Plates, dental, manufacture of, F. M. Shields, San Francisco, Cal.  
 Nov. 21, 1871. Plates, dental, vulcanizing rubber for, C. M. Kelsey, Mt. Vernon, O.  
 Dec. 5, 1871. Plates, dental, apparatus for molding, J. W. Hyatt and I. S. Hyatt, Albany, N. Y.  
 Dec. 12, 1871. Plates, dental, for artificial teeth, . . . G. Morrison, Palmyra, Wis.  
 Feb. 6, 1872. Plates and teeth, improvement in, . . . R. E. Burlan, Lewisburg, Pa.  
 Apr. 9, 1872. Pluggers, dental, . . . W. F. Griswold, Leavenworth, Kansas.  
 Apr. 9, 1872. Plugging instruments, . . . T. L. Buckingham, Philadelphia, Pa.  
 Apr. 30, 1872. Plates, base for artificial teeth, . . . J. A. Bidwell, Toledo, O.  
 Aug. 26, 1873. Pluggers, . . . T. L. Buckingham, Philadelphia, Pa.  
 Jan. 6, 1874. Plates, alloy for, . . . E. Conway, Dayton, Ohio.  
 Jan. 13, 1874. Pluggers, dental, . . . G. H. Chance, Salem, Oregon.  
 Feb. 10, 1874. Plate and tooth, . . . R. E. Burlan, Perrysville, Pa.  
 Sept. 16, 1873. Plates, dental, composition for (re-issue), G. F. J. Colburn, Newark, N. J.  
 Dec. 2, 1873. Pluggers, . . . J. T. Codman, Boston, Mass.  
 Nov. 17, 1874. Pluggers, automatic, . . . W. M. Reynolds, New York.  
 Jan. 19, 1875. Pluggers, pneumatic, . . . G. W. Nichols, Chicago, Ills.  
 Jan. 19, 1875. Pluggers, . . . J. W. Baxter, Vevay, Ind.  
 Jan. 26, 1875. Pluggers, . . . L. J. P. E. Gaillard, Paris, France.  
 Feb. 9, 1875. Polishing attachment for dental engines, C. B. Ansart, Oil City, Pa.  
 Feb. 9, 1875. Plates, dental, . . . D. M. Lamb, London, Canada.  
 Mar. 9, 1875. Plates, dental, . . . J. N. Clark, Bradford, Vt.  
 Mar. 9, 1875. Plates, dental, . . . G. V. N. Relyea, Belleville, Canada.

Mar. 23, 1875.	Plates, dental, apparatus for forming,	F. L. Hearson and J. H. Moseley, Brooklyn, N. Y.
Mar. 30, 1875.	Plugger, dental,	Robert B. Donaldson, Washington, D. C.
May 18, 1875.	Plugger, dental, attachment to,	L. Duvinage, Philadelphia, Pa.
May 18, 1875.	Plugger, dental,	E. S. Rider, Catlettsburg, Ky.
Jan. 8, 1875.	Plugger, dental,	A. Williams, Philadelphia, Pa.
July 20, 1875.	Plugger, dental,	C. Bilharz, Pittsylvania C. H., Va.
July 27, 1875.	Plugger, dental,	A. J. Polk, Millersburg, Pa.
Aug. 17, 1875.	Plugger, dental,	T. Crossett, San Francisco, Cal.
Nov. 29, 1870.	Retort, enameled cast iron,	T. D. Phillips, Cassadaga, and T. S. Phillips, Buffalo, N. Y.
Nov. 11, 1873.	Rack, for dental tools,	G. E. Hayes, Buffalo, N. Y.
Feb. 16, 1873.	Reflectors, dental,	F. M. Osgood, Port Chester, N. Y.
Mar. 9, 1875.	Rubber dam tension weights,	T. G. Lewis, Buffalo, N. Y.
Dec. 3, 1872.	Separating teeth, tool for,	R. Arthurs, Baltimore, Md.
Feb. 4, 1873.	Stool, dentists',	I. W. Lyon, Brooklyn, N. Y.
Feb. 18, 1873.	Stool, dentists',	I. W. Lyon, Brooklyn, N. Y.
Mar. 10, 1874.	Saliva Ejector,	J. E. Fisk, Salem, Mass.
June 16, 1874.	Self-adjusting dam,	J. L. Chevalier, Newark, N. J.
July 21, 1874.	Shafting, universal (re-issue),	S. S. White, Philadelphia, Pa.
Sept. 8, 1874.	Separating Apparatus,	O. A. Jarvis, New York.
June 28, 1870.	Tongue Holder,	F. S. Osborn, Port Chester, N. Y.
July 20, 1870.	Tooth Pick,	W. E. Blake, New York.
Aug. 22, 1871.	Tongue Holder,	F. M. Osborn, Port Chester, N. Y.
Apr. 23, 1872.	Tool Handles,	F. A. Will and J. A. Finck, San Francisco, Cal.
Apr. 22, 1873.	Tool, dentists',	C. P. Grout, New York.
May 19, 1874.	Tool, dental,	H. E. Dennett, Boston, Mass.
Aug. 4, 1874.	Treadles, movements for operating,	N. Stow, Binghamton, N. Y.
Dec. 22, 1874.	Tooth brushes,	M. A. R. Lowd, Boston, Mass.
Jan. 12, 1875.	Tooth brushes,	Charles Bulkley, Philadelphia, Pa.
June 8, 1875.	Tooth brushes,	J. Wayne, Philadelphia, Pa.
July 5, 1870.	Vulcanizers, safety valve for,	F. R. Morehead, Chandlersville, Ohio.
May 23, 1871.	Vulcanizing Apparatus,	B. M. Hotchkiss, Naugatuck, Conn., and Geo. M. Allerton, New York.
June 3, 1873.	Vulcanizers, regulators for,	G. M. Hopkins, Albion, N. Y.
Aug. 11, 1874.	Vulcanizing apparatus,	J. R. B. Ransom, Toledo, Ohio.
Dec. 8, 1874.	Vulcanizers, regulators for,	E. T. Starr, Philadelphia, Pa.
May 25, 1875.	Vulcanizing apparatus,	H. M. Edson, Toledo, Ohio.
July 6, 1875.	Vulcanizing apparatus,	F. Heindsmann, New York.
July 26, 1870.	Wax, Machine for cutting into sheets,	Wm. F. Barnes, Rockford, Ill.

## CLASSIFICATION OF DENTAL PATENTS.

The total number, 209, are classified as follows :

Artificial Teeth, improvements in,	9	Cabinets for dentists,	2
Artificial dentures and bases,	14	Cements (oxy-chlorides),	2
Artificial Teeth, mold for,	1	Dentifrice,	4
Artificial Teeth, fastening to metallic,		Drills, dental,	15
celluloid, or rubber plate,	6	Depurator, for teeth and gums,	1
Articulators,	2	Disks,	1
Apparatus for obtaining the bite,	1	Engine, dental, and attachments,	22
Amalgams,	1	Fracture of lower jaw, apparatus for treatment of,	1
Brackets, for dental purposes,	1	Filling teeth, preparations and apparatus for,	7
Blow pipes,	1	Files and file holders,	3
Bibs, dental,	1	Forceps,	8
Chairs, dental,	8	Flasks,	4
Celluloid and pyroxyline plates, manufacture of and processes,	6	Gas Regulators for vulcanizers,	3
Clamps for flasks,	1	Gold Foil,	9
Clamps for coffer dam,	3		

Gas burner, laboratory, . . . . .	1	Retorts, . . . . .	1
Head Rests, . . . . .	4	Rack for points, . . . . .	1
Impression cups and impression com- pounds, . . . . .	3	Reflectors, . . . . .	1
Instruments, . . . . .	2	Rubber dam tension weight, . . . . .	1
Inhalers, . . . . .	1	Separating apparatus for teeth, . . . . .	2
Lathes and treadles, . . . . .	2	Stools, dentists', . . . . .	2
Mallet pluggers, . . . . .	20	Saliva ejector, . . . . .	1
Maxillary compress, . . . . .	1	Self-adjusting dam, . . . . .	1
Mirrors, . . . . .	2	Tongue Holder, . . . . .	2
Nitrous oxide apparatus, . . . . .	2	Tooth Pick, . . . . .	1
Plates, dental, apparatus for casting and forming, . . . . .	3	Tool Handles, . . . . .	1
Plates, dental, atmospheric pressure attachment, . . . . .	4	Tooth Brushes, . . . . .	3
Plates, dental, alloy for, . . . . .	1	Vulcanizing apparatus, . . . . .	5
		Wax, machine for cutting into thin sheets, . . . . .	1

## DENTAL PATENTS.

[Under this head we publish, as items of news, the names of all patents relating to Dentistry, issued for the quarter preceding the publication of this Journal.]

174,859—March 14, 1876.—DENTAL PLATES.—Quincy A. Scott, Pittsburg, Pa.

A flexible air cup or retainer is formed with a lug upon its outer side, which lug enters a recess in the plate, and is riveted therein. The metallic retaining device is, therefore, located where it cannot come in contact with the gums.

174,619—March 14, 1876.—TOOTH PICK.—George Clark, Jr., Boston, Mass.

This is a wooden tooth pick, artificially impregnated with a flavor or perfume.

174,942—March 21, 1876.—DENTAL RUBBER DAM.—E. Parmley Brown, Flushing, N. Y., assignor to Henry C. Howells, same place.

A depression is molded in the rubber dam, so as to project into the mouth. This arrangement prevents all puckering of the dam.

175,046—March 21, 1876.—DENTAL ARTICULATORS.—Geo. G. Davidson, Lambeth, Great Britain.

A tube bent upon itself at right angles carries a horizontal sliding arm, and also a sliding upright standard, to which a second arm is hinged. A rod which holds the upper set of teeth is connected with the hinged arm by a ball and socket joint.

175,189—March 21, 1876.—ELECTRO-MAGNETIC DENTAL MALLETS.—Allen Spencer, Columbus, Ohio, assignor to Samuel S. White, Philadelphia, Pa.

175,505—March 28, 1876.—DENTAL RUBBER DAM PUNCHES.—John Rice, Fort Madison, and P. T. Smith, Burlington, Iowa.

A piece of rubber dam is stretched over the blunt end of a round blade of a pair of shears, and an adjustable thimble upon the end of a bowed blade cuts the round hole.

175,626—April 4, 1876.—ANGLE ATTACHMENT FOR DENTAL ENGINES.—Eli T. Starr, Philadelphia, Pa., assignor to S. S. White, same place.

Both the bevel gears by which the angle is formed are entirely enclosed within the main barrel or case of the attachment.

175,706—April 4, 1876.—DENTAL RUBBER DAMS.—Henry C. Howells, Flushing, N. Y.

A mirror is affixed to a dental rubber dam, to relieve the dentist from the trouble of holding it.

175,794—April 4, 1876.—TOOTH PICKS.—W. W. Wallace, Philadelphia, Pa.

This is a bow shaped piece, from the ends of which an elastic cord is stretched.

176,710—April 25, 1876.—DENTAL DRILLS.—Anderson W. Todd, Chicago, Ills.

The cord which operates a dental drill passes over a pulley journaled by the drill, and then passes through a tubular hand piece to pulleys which are connected by a novel attachment to the ordinary dental engine.

177,804—May 23, 1876.—ARTIFICIAL TEETH.—Sherwood E. Cheeseman, Bowling Green, Ky.

The securing pins are in countersunk recesses, and the usual thickened portion on the lingual surface of the tooth dispensed with.

177,157—May 9, 1876.—DENTAL PLUGGERS.—Cassius M. Richmond and Alex. Warner, Jr., San Francisco, Cal.

A pivoted sliding frame carries a cam, which operates a hammer attached to a bent spring over the end of the plugging tool. The cam frame adjusts by means of a sleeve sliding on the tool case.

7,107—May 9, 1876.—(Reissue).—DENTAL PLUGGERS AND BURRING TOOLS.—Irving M. Seamans, Buffalo, N. Y., assignor by mesne assignments to Johnston Brothers.

A spring tooth is attached to the hammer, and engages with a screw on the revolving shaft of the plugger. The hammer is elevated by the rotations of the shaft, and released when the spring tooth runs out upon a cylindrical enlargement above the screw. The tool is keyed into its socket by a longitudinal groove, terminating in a cross groove upon the tool and a pin on the interior of the socket.

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### BOOKS RECEIVED,

CORRESPONDENZ BLATT für Zahnärzte, Berlin, C. Ash & Sons.

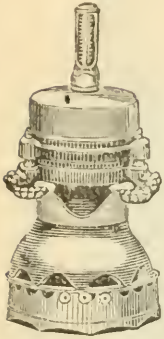
LE PROGRES DENTAIRE, Rédigé, par Le Dr. M. STEVENS. Paris: C. Ash & Sons.

GIORNALE DI CORRISPONDENZA PEI DENTISTI. Redatto dal Dott. Alberto Coulliaux. Parma: Pubblicato da C. Ash E Figlio.

B. D. M. CO.  
BUFFALO.

## THE HAYES IRON CLAD OVENS.

FOR ONE OR TWO CASES.

*Patented March 5, 1861, and April 3, 1866.*

These Ovens are small and compact. They are lined with copper of the usual thickness, which is surrounded with a shell of malleable iron  $\frac{1}{8}$  inch thick, and strong enough of itself to withstand many times the strain required in Vulcanizing. They may be used therefore safely till the copper is entirely destroyed by corrosion, which may then be renewed at small expense.

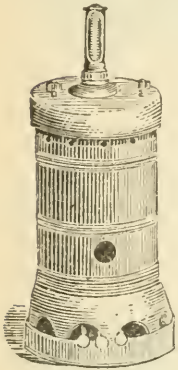
## PRICES.

No. 1, complete for use,	\$15.00
No. 2, " " "	16.00

B. D. M. CO.  
BUFFALO.

## THE HAYES IRON CLAD BOILERS.

FOR TWO OR THREE CASES.

*Patented July 8, 1862, and April 3, 1866.*

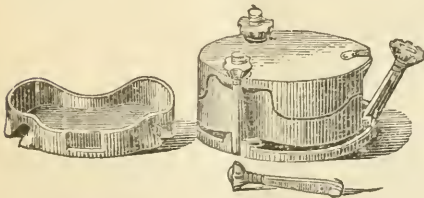
These Boilers are made with and without the Iron Clad Shell. The cover is secured by three set-screws, which play in a movable screw collar, and produce direct pressure upon the packing joint. The Thermometer bulb is immersed in a mercury bath outside the steam chamber. These Vulcanizers are heated with Gas, Alcohol, or Kerosene Oil. They are represented by the cuts as standing upon the Hayes Kerosene Heater. The Union Kerosene Stove will be supplied with the Hayes Boiler if other heating apparatus is not specified.

## PRICES.

No. 2, Copper,	\$16.00
No. 3, Copper,	17.00
No. 2, Iron Clad,	17.00
No. 3, Iron Clad,	18.00
With Union Kerosene Stove, extra,	1.25

B. D. M. CO.  
BUFFALO.

## THE HAYES FLASKS AND CLAMPS.



This Flask is furnished from new patterns, and will receive a model about a quarter of an inch larger than the old style.

The lug-joint of the clamp is so constructed that the strain all comes upon the casting. The pin only serves to keep the lug in place while not in use. The several pieces all being attached together, are not liable to get lost or mislaid.

## PRICES.

Flask for Vulcanizing Oven or Boiler,	\$0.50
Clamp for Flask,	.50

A. M. Co.  
BUFFALO.

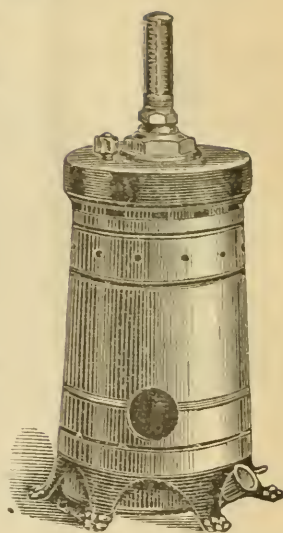
## THE WHITNEY VULCANIZER.



For Kerosene.

The heater is composed entirely of copper and brass, and is of two pieces only, a copper pot, and brass head that screws on to the pot, dispensing with all bolts and nuts. They are uniformly  $3\frac{3}{4}$  inches diameter inside, and for two cases 5 inches, and for three cases 7 inches deep. The whole apparatus complete for use only weighs from 4 to  $5\frac{1}{2}$  pounds, according to the size, whether for two or three cases. Hayes' Patent Mercury Bath is adapted to this Vulcanizer, by which the liability of the thermometer to accident is very much decreased.

The heat is applied by either Gas, Alcohol or Kerosene. Apparatus for burning either is furnished as required. The Kerosene Stove is also excellent for Laboratory use for heating flasks, for packing, etc. This Stove is adapted to all Vulcanizers, and will always be sent out with the Whitney Vulcanizer, unless other heating apparatus is specially ordered.



For Alcohol and Gas.

No. 1, Vulcanizer, Gas or Alcohol,	\$15.00	No. 3, Vulcanizer, Gas or Alcohol,	\$17.00
No. 2, " " "	16.00	With Union Kerosene Stove, extra,	1.25

## PRICES.

B. D. M. Co.  
BUFFALO.

## THE WHITNEY FLASKS.



New Style.

The following styles of this well known Flask are made exclusively by us:

The "Old Style," with the bolts screwing into the lower section of the Flask.

The "New Style," with bolts and nuts.

The "Slot Flask," in which the bolt is received between lugs on the lower section of the Flask.

The "Large Flask," which measures  $3\frac{3}{4}$  inches across the widest part.

The "Deep Flask," which is of the ordinary size, but half an inch deeper; for partial cases, repairing, etc.



Old Style.

## PRICES.

Whitney Flasks, of malleable iron,	\$1.00
" " large size,	1.00
Bolts for Flasks, old style, per set of 3,	.18
" " new style (with nuts), per set of 3,	.25

B. D. M. Co.  
BUFFALO.

## LARGE VULCANIZER.

As there is some demand for a larger and stronger Vulcanizer than the size generally in use ( $3\frac{1}{2}$  inches diameter), we have now ready for the market a Vulcanizer made on the plan of the Hayes Copper Boiler,  $4\frac{1}{2}$  inches in diameter. It is made of heavy copper, and of extra strength throughout. Apparatus for burning either Gas, Alcohol or Kerosene. For Kerosene, a large size of the Union Stove is used.

## PRICES.

No. 2, Large Vulcanizer,	\$20.00
No. 3, " "	22.00
With Kerosene Stove, extra,	1.50

B. D. M. CO.  
BUFFALO.

## THE HAYES CELLULOID APPARATUS.

TO BE USED WITH THE HAYES OR WHITNEY BOILERS.

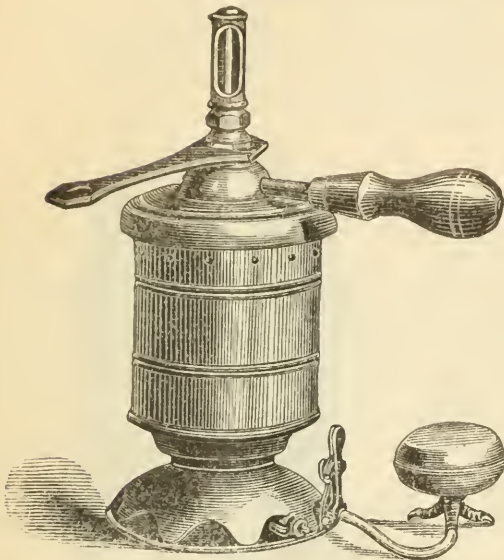


Fig. 1.

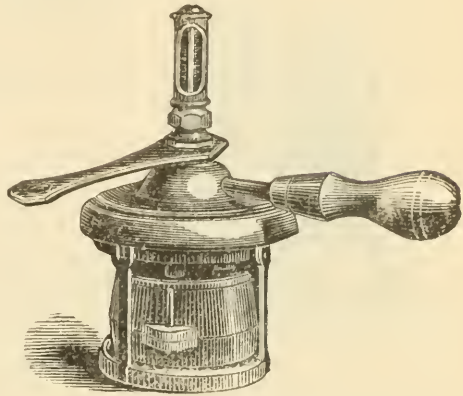


Fig. 2.

Fig. 1 illustrates the machine as seen in use. Fig. 2 shows the cover, with clamp, flask, etc., attached, ready to be placed in the boiler.

## DIRECTIONS:

Prepare the mould as is usual for Rubber work, except great care should be observed in cutting out free and sufficient space for surplus material. A border may be left one eighth of an inch wide surrounding the plate mould; outside of that, the entire surface of the plaster, in one or the other sections, should be removed to the depth of one sixteenth of an inch, and enough deeper to receive all the surplus. Any flask will answer, providing the guide pins are of sufficient length. Dip the Celluloid Blank in boiling water and shape it somewhat to fit the mould. The flask should come together within three-eighths or one-half inch. Place the flask on the clamp bottom and close the lugs, which can be done without wholly withdrawing the screw from the top plate of the clamp; then turn down the screw till the flask is slightly compressed, as seen in Fig. 2; or, the screw may be wholly withdrawn from the cover, the lugs hitched on the upper clamp plate, and the clamp and contents set into the boiler; then put the cover in place, with the three plungers passing through the holes left for that purpose in the clamp plate; replace the screw and turn down till the flask is slightly compressed, as before. Before the clamp, flask and cover are placed in position, pour into the boiler from one to two ounces of water. A few minutes will suffice to form steam, and before the water has all evaporated, the flask may be nearly closed. During this stage of the process the thermometer will register  $212^{\circ}$ . When steam ceases to escape, the heat may be raised gradually to  $290^{\circ}$ , and in the meantime the screw must be gradually turned down. At this last stage great pressure is required, and it is thought better to take more time than to use an undue degree of heat. *On no account heat above  $290^{\circ}$ .*

By the handle, which is permanently attached to the cover, the clamp can be lifted out and replaced with the greatest facility, so that there need be no uncertainty as to whether the flask is fully closed. If removed for more than an instant, a sheet of tin plate, or other cover, should be slipped over the boiler to prevent the hot air from escaping. If the machine is wanted for another case immediately, the flask can be removed at once and placed in any other clamp, or under a heavy weight till sufficiently cold. It is recommended to cover the inside of the flask with a thick coat of whitewash, mixed stiff as batter, which will enable the plaster, after being soaked in water, to be easily removed.

## PRICES.

Apparatus, complete, with two flasks, . . . . . \$9 00

## PARTS OF APPARATUS SOLD AS FOLLOWS:

Cover and Clamping Apparatus, . . . . .	5 00
Thermometer and Case, . . . . .	2 00
Flasks for Celluloid, each, . . . . .	1 00

BUFFALO DENTAL MFG. CO., 307 and 309 Main St., Buffalo, N. Y.

## BROWN'S IMPROVED CELLULOID APPARATUS.

DRY HEAT PROCESS. (PATENT PENDING.)

Manufactured by B. S. BROWN & SON,  
385 Washington St., Buffalo, N. Y.

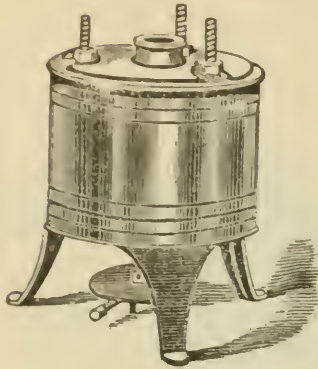


FIG. 1.

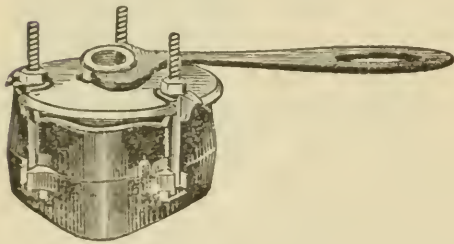


FIG. 2.

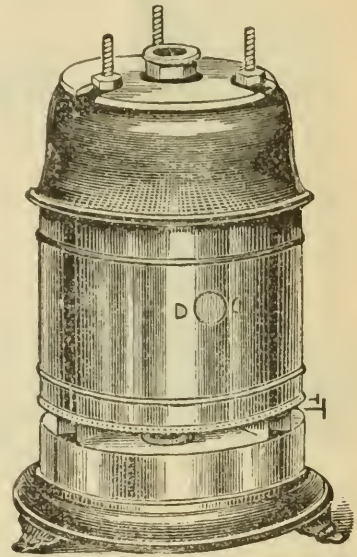


FIG. 3.

This apparatus is now acknowledged by those conversant with the working of Celluloid, to be the most *simple, convenient, effective and safe* machine ever introduced.

*The dry process being conceded as the only perfect method*, as it renders the Celluloid more *permanently* seasoned than with steam, oil or glycerine.

This is the **ONLY** apparatus adapted to use with kerosene, and the **ONLY** apparatus with which *any number* of flasks can be packed in immediate succession, for, when one flask is packed, it can be removed to cool, and another put in and treated as before.

Fig. 1 represents the apparatus for gas or alcohol. Fig. 2 shows the flask lifted out by the large wrench. Fig. 3 represents the kerosene apparatus adapted to the No. 2 Union Stove. The No. 1 Union Stove does not give sufficient heat.

The flask can be lifted out at any moment, for examination, while packing, without even shifting the wrench.

The flask is held from turning (when turning the nuts) by means of the large wrench applied to the hexagonal projection, on its top. This projection is hollow (and contains fusible metal to indicate the heat of the flask); it is flanged, to hold the wrench; while the flask is being lifted, the wrench can be shifted to any side of the flask.

As there is a lack of uniformity in the ordinary thermometers, and as it is only necessary to indicate the maximum working temperature, we employ instead, a plug of fusible metal, placed in the cup on the flask top, which indicates the heat of the flask far more readily and accurately than a thermometer.

## PRICES:

Apparatus complete, including one flask, large and small wrench, and gas or alcohol burner, . . . . .	\$8.00
Apparatus complete, adapted to No. 2 Union Stove, . . . . .	8.00
Extra flasks, each, . . . . .	2.00
Wrenches, each, . . . . .	.25
Bolts, per set, . . . . .	.50
No. 2 Union Stove, extra, . . . . .	3.00

*For Sale by Buffalo Dental Manufacturing Company.*

# RELYEA'S

## Compound Dental Plate Retainer.

PATENTED MARCH 9, 1875.

OSWEGO, N. Y., May 7, 1875.

*To the Members of the Dental Profession:* No artificial denture retained by atmospheric pressure, however perfect in its adaptation at first, but which will become slack after being worn for a time, and the patient come back to get the plate "tightened." After two years of unceasing effort I have perfected a retainer, one hour's wear of which will satisfy both patient and dentist of its perfect success. When properly adjusted the plate adheres firmly; indeed it *cannot drop*. Made of the best materials, I feel safe in pledging perfection and permanency. It saves a remake, is invaluable in temporary sets; can be put in all *kinds* and sizes of plates; also in old plates.

*PRICES.*—Twelve and under, 50 cents each. Put up in boxes of not less than six, and sent to any part of the U. S. post-paid. Charge for inserting should be \$3 for partial, and \$5 for full upper sets.

The plates are made in the usual way—the Retainer is inserted in the ordinary suction chamber. Leads to form the chamber will accompany the Retainer; also caps and platina pins (made expressly) for inserting them.

A LIBERAL DISCOUNT TO DEALERS. CASH MUST ACCOMPANY ALL ORDERS.

Send your orders to BUFFALO DENTAL MFG. CO., or to

G. V. N. RELYEA,

Oct-75-1y.

93 WEST FOURTH STREET, OSWEGO, N. Y.

# NICKEL PLATING.

THE BUFFALO DENTAL MANUFACTURING CO.

ARE PREPARED TO

## NICKEL PLATE

DENTAL AND SURGICAL INSTRUMENTS OF ALL KINDS, SURVEY-  
ORS' INSTRUMENTS, HOUSEHOLD AND MECHANICAL  
ARTICLES, BUILDERS' HARDWARE AND  
PLUMBERS' MATERIALS, &c., &c.  
AND ALL KINDS OF POLISHED METAL WORK.

Nickel Plating is as hard as untempered steel; for durability and brilliancy of color it is superior to any known metal. It does not tarnish when exposed to heat, moisture, in the action of most acids, and all gases; and is more desirable for all metallic articles of smooth surface than any other kind of covering.

BUFFALO DENTAL MANUFACTURING CO.,

307 & 309 Main street, Buffalo, N. Y.

BLAKE & CO.,  
MANUFACTURERS OF  
DENTAL INSTRUMENTS

OF EVERY DESCRIPTION,

WHOLESALE AND RETAIL,

212 CHESTER STREET, . . . . . PHILADELPHIA.

---

WE HAVE CONSTANTLY ON HAND,

*Extracting Forceps,*

*Scaling Instruments,*

*Plugging Instruments,*

*Mouth Mirrors,*

*Hand Mirrors,*

*Corundum Wheels,*

*Excavators,*

*Foil Shears,*

*Brush Wheels,*

*Burs, Drills,*

*Files,*

*Lathes, &c.*

VULCANITE SCRAPERS

AND

TOOLS OF EVERY DESCRIPTION,

AND ALL ARTICLES USED BY THE PROFESSION.

INSTRUMENTS OF ANY DESIGN MADE TO ORDER.

*All Orders by letter or otherwise promptly attended to.*

CATALOGUES SENT ON APPLICATION.

---

All Instruments Manufactured by BLAKE & Co. for sale by *Buffalo Dental Mfg. Co.*  
[ja76-1y]

A. D. M. CO.  
BUFFALO, N. Y.

## THE HAYES DENTAL CHAIR.

MEDIUM POSITION.

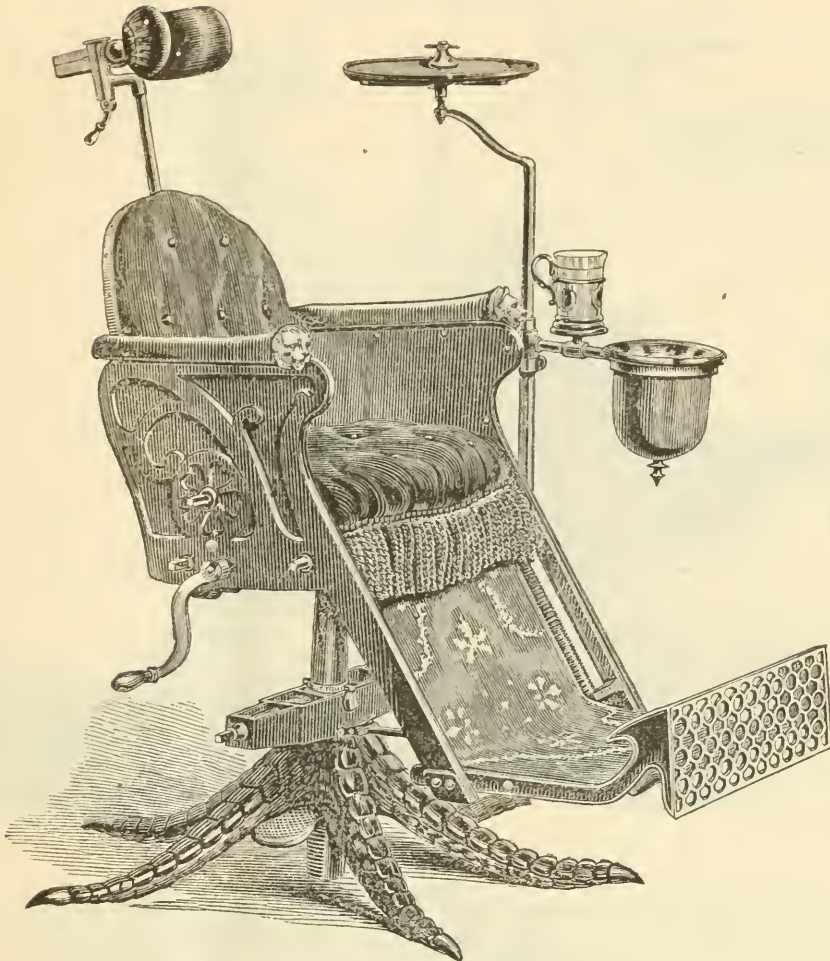


Fig. 1.

The above cut represents this Chair in its normal, or half-elevated, position. By turning the crank to the left, the whole Chair will be lowered nine inches, and will rest upon its base, the seat being twenty inches from the floor, as in Fig. 2. Then, by placing the crank on the rear shaft, the back may be lowered into the position shown in the same cut; in which position the patient's head may be brought directly into the operator's lap, while he himself occupies an easy chair. In this backward movement the Head-rest keeps itself in position with the head of the patient, being lowered automatically by machinery in the back of the Chair to correspond with the two centers of movement. This we believe has never before been accomplished. If, instead of turning the crank to the left, it be placed on the lower shaft and turned to the right, the whole Chair will be elevated another nine inches, as in Fig 3, making a perpendicular movement of eighteen inches; then, if placed on the upper shaft, the seat may be elevated another ten inches; and the arms to correspond, may be raised five inches. The Foot-board is elevated with the crank by operating the forward shaft; and the Foot-rest is further elevated by turning upon its hinges, so as to stand about five inches below the level of the cushion;

B. T. W. CO.  
NEW-YORK.

## THE HAYES DENTAL CHAIR.

LOWEST POSITION.

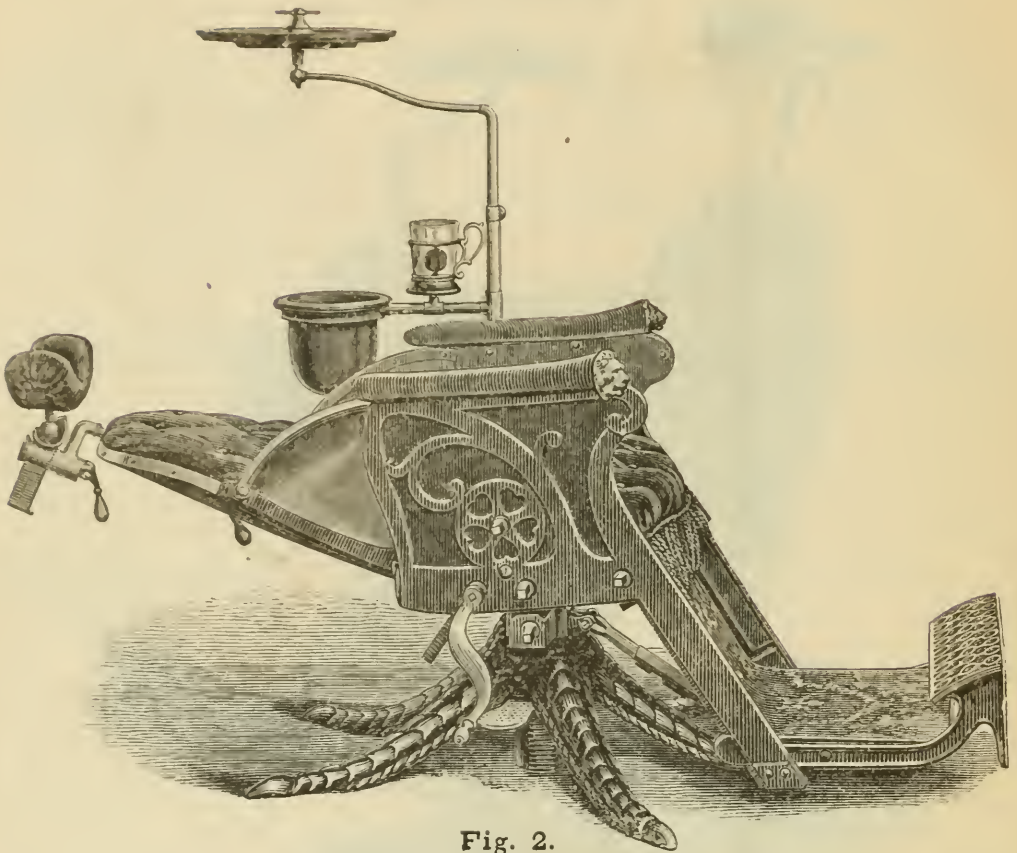


Fig. 2.

forming the most complete "Baby-Chair" hitherto known, in which position the seat is elevated forty-eight inches, bringing the little face nearly on a level with the eyes of the operator. The Head-rest is fastened in all directions by one cam lever, and may be raised or lowered by the movement of another. The whole Chair may be rotated upon its base, easily, by operating the pedal, as seen in all the cuts between the legs.

By means of these movements, the Chair may be placed in any intermediate position, or combination of positions, between the extremes as here illustrated; and all these movements are entirely SELF-SUSTAINING. No pins, catches, clamps, ratchets, or other fastenings, are required. Wherever the crank leaves it, every part is secure, and no part has to be unfastened preparatory to a further or a reverse movement, except the pedal, when rotation is required; and that, instantly, readjusts itself when the desired position has been reached.

The cuts represent a bracket attached to the Chair, carrying a Spittoon and its Bracket, a Glass-holder and a Tool-table; all adjustable to any position within the range of their combined movements.

The Chair stands upon a base so broad as not to tilt by any weight or movement; and is so arranged that the center of gravity always coincides with it and the movable telescopic column by which it is elevated and lowered. The framework is of iron, painted in imitation of rosewood, and is richly upholstered with plush; some parts of

P. D. M. CO.  
BUFFALO.

## THE HAYES DENTAL CHAIR.

HIGHEST POSITION.

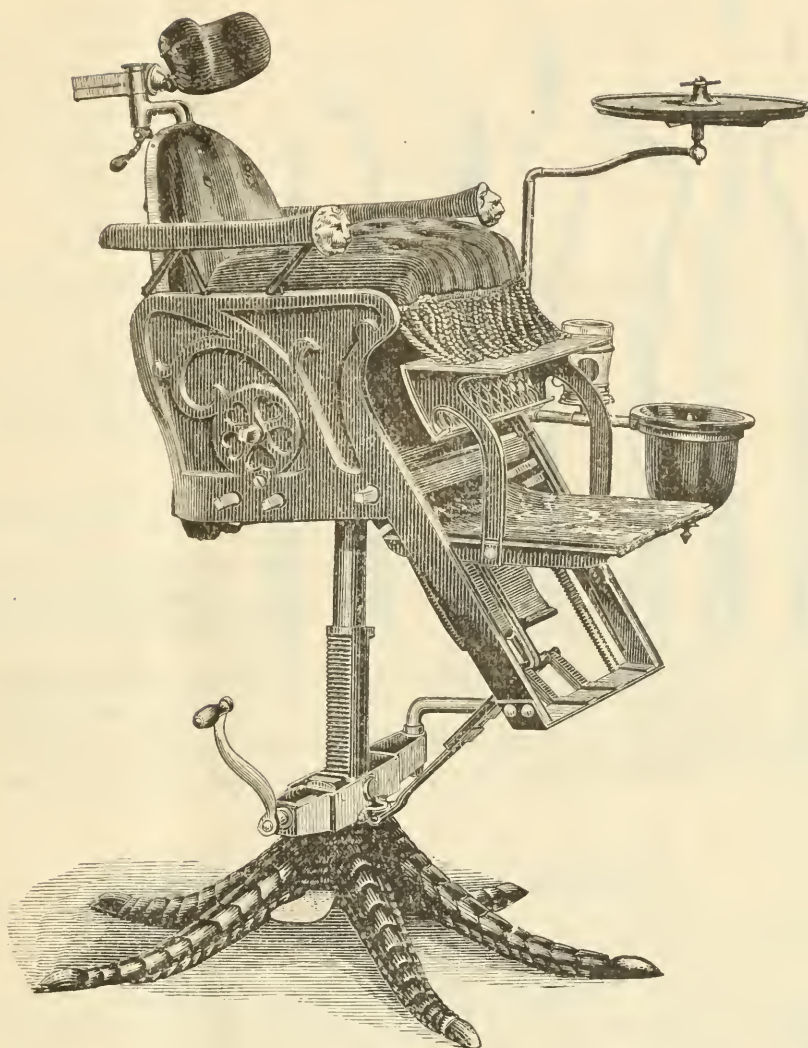


Fig. 3.

the running gear are of steel, and every part is finished in the highest style of modern workmanship.

We offer them to the profession, now, at or below cost, trusting for reimbursement and remuneration to the time when better appliances will facilitate their manufacture.

Orders will be filled in the order received, with or without the Spittoon, Glass-holder, Tool-table, etc., as desired.

## PRICES:

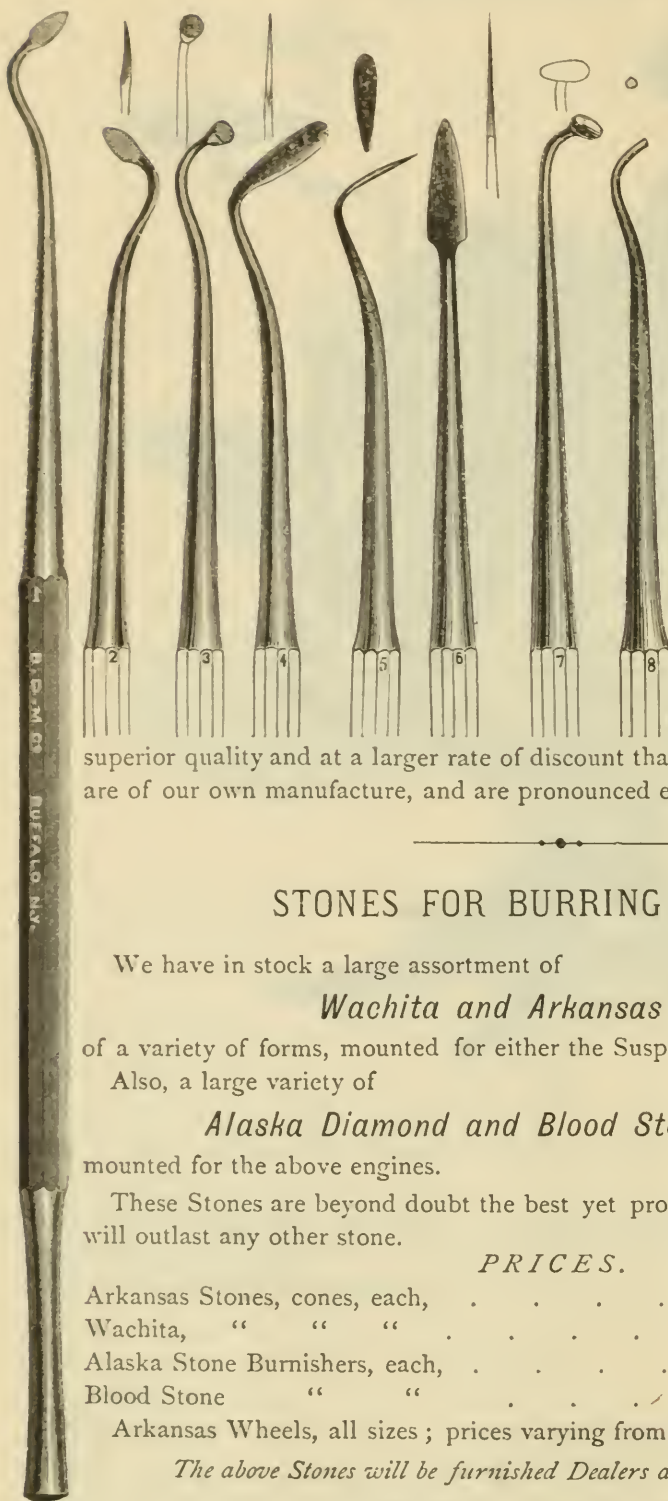
Hayes Dental Chair, . . . . .	\$200 00
Spittoon, Bracket and Glass-holder, <i>extra</i> , . . . . .	12 50
Tool-table, Standard and Bracket, <i>extra</i> , . . . . .	12 50

*Manufactured by the Buffalo Dental Manufacturing Co.*

D. M. CO.  
BUFFALO

## NEW AMALGAM PLUGGERS AND BURNISHERS.

DEvised BY THEO. G. LEWIS.



This new set of Pluggers and Burnishers, designed for Amalgam or other plastic materials for filling teeth, is believed to comprise all instruments necessary for their proper manipulation.

## PRICES.

Lewis' Amalgam Pluggers,  $\frac{1}{16}$  inch, plain handles, per set of 8, ..... \$4.00

Lewis' Amalgam Pluggers,  $\frac{1}{4}$  inch, polished handles, per set of 8, ..... \$6.00

## TO DEALERS.

EXCAVATORS, SHEET GUTTA PERCHA AND WAX, SHEET WAX AND RUBBER DAM.

We are now prepared to offer the above named articles, of a superior quality and at a larger rate of discount than heretofore. The Excavators are of our own manufacture, and are pronounced equal to any in the market.

## STONES FOR BURRING ENGINES.

We have in stock a large assortment of

*Wachita and Arkansas Stones,*

of a variety of forms, mounted for either the Suspension or Morrison Engines.

Also, a large variety of

*Alaska Diamond and Blood Stone Burnishers,*

mounted for the above engines.

These Stones are beyond doubt the best yet produced for finishing fillings and will outlast any other stone.

## PRICES.

Arkansas Stones, cones, each, . . . . .	\$1.00
Wachita, " " " . . . . .	.50
Alaska Stone Burnishers, each, . . . . .	5.00
Blood Stone " " . . . . .	10.00

Arkansas Wheels, all sizes ; prices varying from 2 to 9 dollars each.

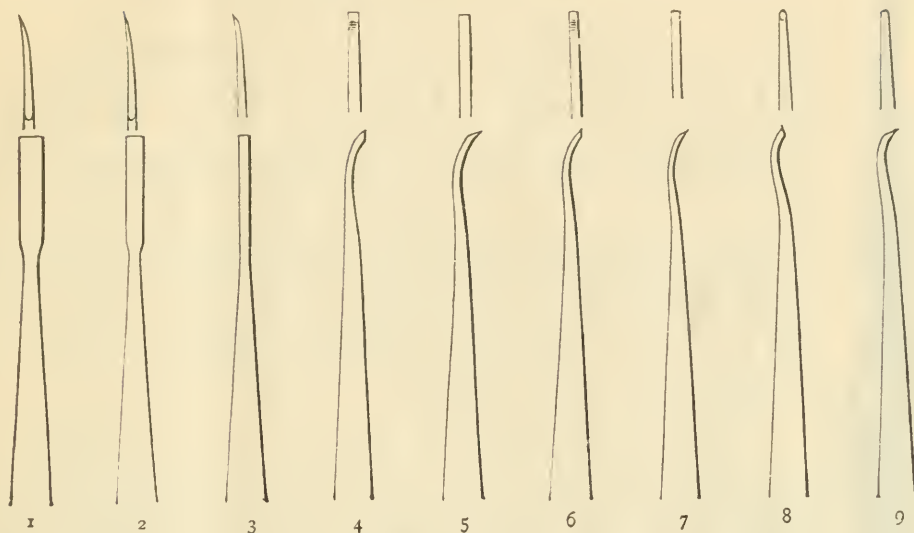
*The above Stones will be furnished Dealers at Manufacturers' rates.*

BUFFALO DENTAL MANUFACTURING CO.

B. D. M. CO.  
BUFFALO.

## ENAMEL CHISELS

FROM PATTERNS FURNISHED BY DR. A. P. SOUTHWICK.



Designed for preparation of cavities in Bicuspids and Molars. Nos. 8 and 9 are especially for cutting out fissures.

## PRICE.

Southwick Enamel Chisels, $\frac{1}{4}$ inch, polished ends, per set of 9,	\$4 50
“ “ “ “ polished and nickel plated,	6 00

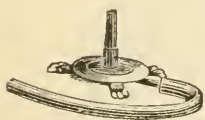
BUFFALO DENTAL MANUFACTURING CO.

B. D. M. CO.  
BUFFALO.

## LABORATORY GAS BURNER,

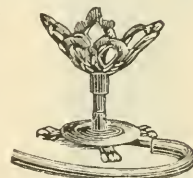
FOR DENTISTS, DRUGGISTS AND JEWELERS.

This lamp is so constructed that it burns gas with a blue flame without smoke, and gives an intense heat. It is an admirable substitute for the alcohol lamp. It will be found a very convenient lamp for Dental Laboratory use in heating water, “waxing up” a base plate, vulcanizing, and in fact for general heating purposes.



For Vulcanizing and Waxing up.

It is used quite extensively by Druggists for evaporating, heating, etc., being equal to the celebrated Bunsen burner, and will be found equally good for family use in the nursery or sick room, where a small amount of heat is required.



With Spider for heating water.

The Spider can be removed, as shown in the cut, when the lamp is used for “waxing up.” This lamp is furnished with our Vulcanizers, without the Spider, when ordered for gas.

## PRICES.

Gas Laboratory Lamp, with Spider, . . . . .	\$1 25
Without Spider, . . . . .	1 00

U.S. PAT. OFF.  
JULY 4, 1869.

## THE SNOW & LEWIS AUTOMATIC PLUGGER.

Patented Oct. 24, 1865, Oct. 30, Nov. 20, 1866, June 23, 1868, and June 1, 1869.

### THE MOST POPULAR AND EFFICIENT DENTAL INSTRUMENT

Ever offered to the profession, as attested by the large number in use.

From this date (July 1st, 1873) we will manufacture an IMPROVED AUTOMATIC PLUGGER, with the wearing surfaces of steel, and a finer quality of workmanship than heretofore, in all its parts. The new Plugger will combine the qualities of the Snow & Lewis Nos. 1 and 2, and save dealers the necessity of keeping double stocks on hand.

This instrument has a series of

#### TWO DISTINCT GRADES OF BLOWS,

regulated by the tension knob on the top of the instrument and by the extension of the socket piece, allowing the hammer to descend through a greater space. When at its shortest stroke the socket recedes but an eighth of an inch, and one-fourth of an inch at the longest stroke. The different degrees of blows are obtained by means of the milled head on the top of the case which, upon being turned, carries a screw follower down upon the spring. All Pluggers will, hereafter, have this arrangement for compressing the spring and regulating the blow.

#### THE PLUGGER CAN BE LOCKED

by the ring on the handle, and used as a hand instrument. The above feature is not presented in any other Spring Plugger in the market.

The mechanical devices of the Plugger are protected by five patents, embracing all points of any moment applicable to Automatic Pluggers, and we hardly need say that we shall strictly enforce all the rights secured to us therein.

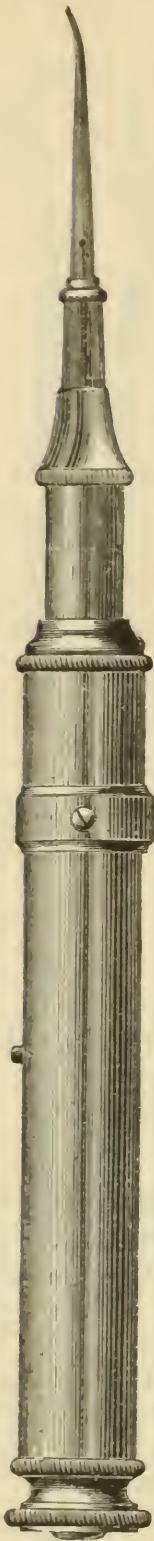
#### PRICES.

Automatic Plugger, triple gilt, No. 1 or 2,	\$16 00
Automatic Plugger, silver or nickel plated,	12 00
Points, per dozen,	4 50
Varney's Points, per set of 13,	7 00
Butler's Points, " 16,	6 00
Enamel Chisels, per set,	2 25
Points in the rough, fitted to socket, per doz.,	2 00
Morocco case, with point Rack,	3 50

Points of any desired pattern furnished to order. All styles of Atkinson's, Butler's and Abbott's points constantly on hand.

#### BUFFALO DENTAL MANUFACTURING CO.

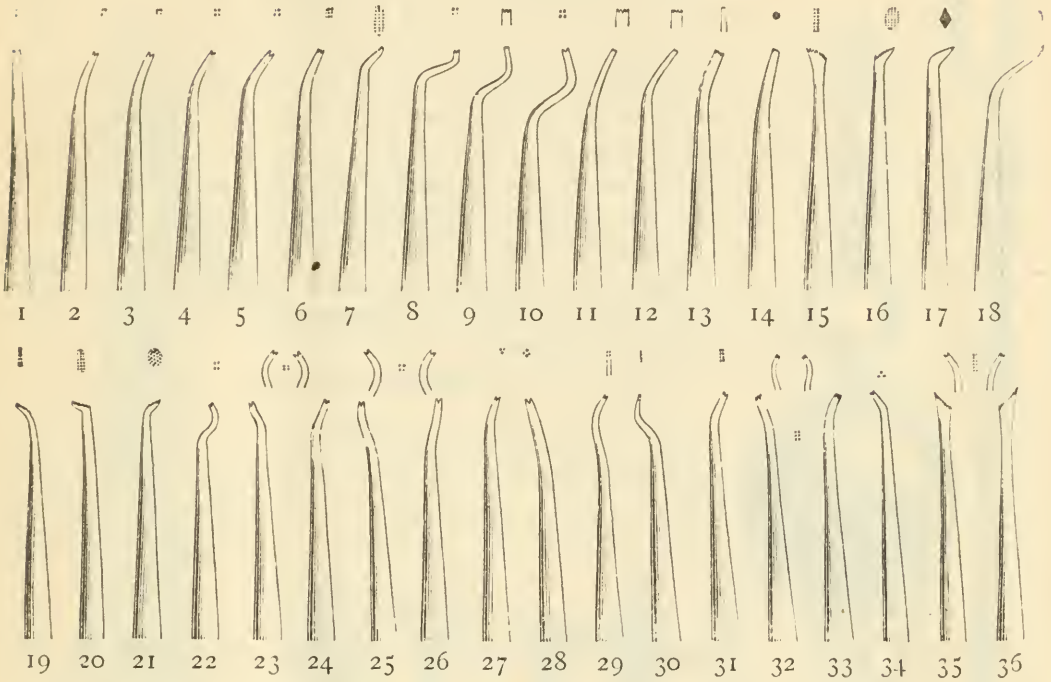
307 and 309 Main Street, BUFFALO, N. Y.



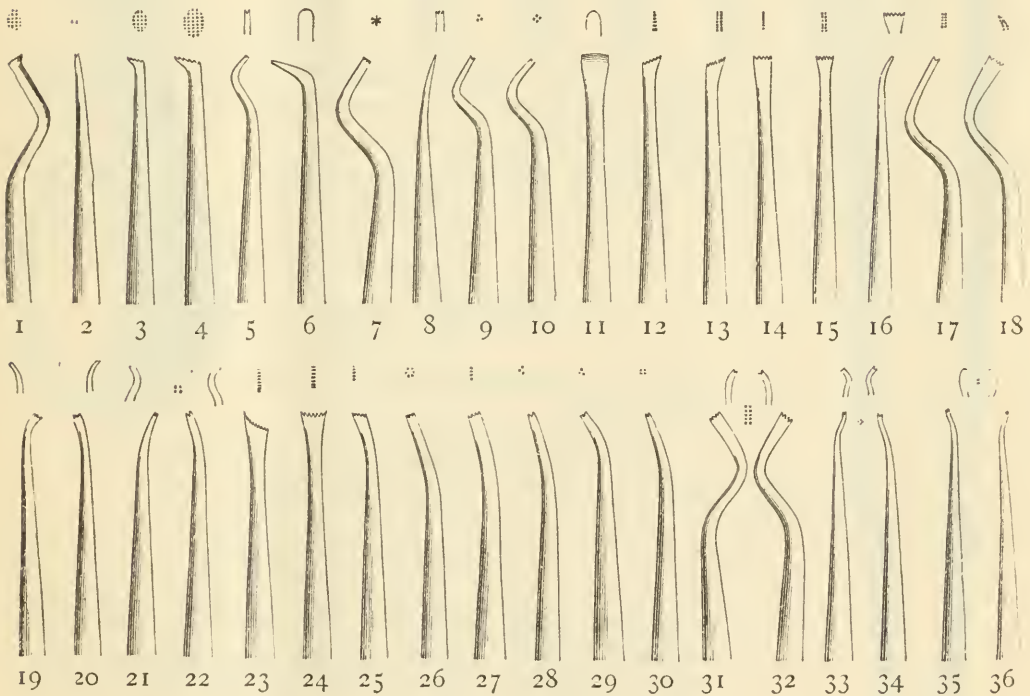
POINTS FOR THE SNOW & LEWIS AUTOMATIC PLUGGER.

R. D. M. CO.  
BUFFALO.

SNOW & LEWIS' POINTS.

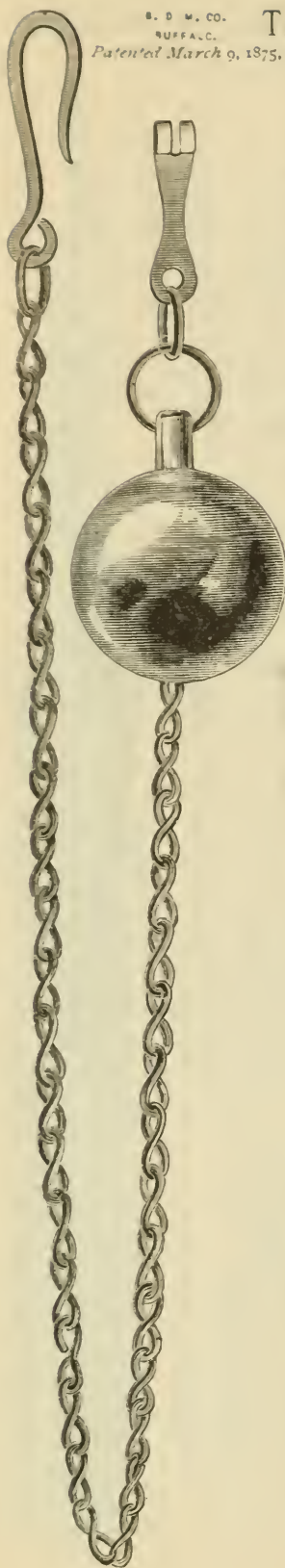


ABBOTT'S POINTS.



PRICE.

Automatic Plugger Points, per dozen, . . . . . \$4.50



## THE LEWIS RUBBER DAM TENSION WEIGHT.

This appliances is for the purpose of keeping a loose corner or projecting fold of the rubber dam out of the way of the operator, and is capable of obtaining tension in almost any direction required. It consists of a chain with a hook at one end for attachment to the rubber, and a ball at the other end as a weight. The length of the chain admits of the ball being thrown over the back of the chair, to one side or in almost any direction. A second hook attached to the ball can be caught in the chain at any point, to shorten it.

This little appliance has been in use several years, and is well spoken of, being admirably adapted for the purpose for which it is designed.

The ball is of metal and nickel plated.

### PRICES.

Lewis' Tension Weight, No. 1, weighs $1\frac{3}{4}$ oz.	60 cts.
" " " No. 2, " $3\frac{1}{2}$ oz.	75 cts.
" " " No. 3, " $4\frac{3}{4}$ oz.	80 cts.

## FORCEPS FOR APPLYING RUBBER DAM CLAMPS.

With or without Bayonet Ends.

All kinds of forceps for applying Rubber Dam Clamps in stock, with or without the Lock Slide Ring, of the very best quality and finish.

Price of either, Crocus polished	\$3.00
" " Nickel plated	3.50

## RUBBER DAM CLAMPS.

We have, of the best quality, all the improved sizes and forms of these invaluable appliances.

Rubber Dam Clamps, all sizes, nickel plated, 60 cts.

## PLASTIC FILLINGS.

A large variety of plastic fillings in stock, consisting of Guillois' Cement, Cement Plombe, New German Cement, Oehlecker's White Enamel Stopping, Houghton's Os Artificiel, Smith's Oxy Chloride.

BUFFALO DENTAL MANUF'G CO.

B. D. M. CO.  
BUFFALO.

## ROTARY RUBBER DAM PUNCH.

DEvised BY THEODORE G. LEWIS.

Three punches differing in size are secured in a hub, which rotates on its axis at the end of, and between, a spring fork having notches at its termini, which retain any one of the points in position when brought in line with the handle.

The rotation of the punch is accomplished by simply pressing on one of the punch points to the right or left, when the spring fork yields and disengages the one held and allows another to take its place.

The journal of the hub is made hollow to allow the rubber punchings to discharge through it.

The whole instrument is of steel, highly finished and nickel plated. The handle is of ebony.

## PRICE.

Lewis' Rotary Rubber Dam Punch, . . . . \$3.00

## WOOD POLISHING POINTS.



Southworth's Turned Wood Polishing Points are prepared for ready insertion in the hollow chucks of the burring engines. Their superiority for polishing fillings and cleaning teeth is claimed, for their cheapness, adaptability, material, and variety of forms. They are designed for labial, lingual, crown and proximal surfaces.

Orders for chucks should state the style of engine in use.

Price per box of 100 points, . . . . \$1.25

Chucks, each, . . . . . 30

For sale, wholesale and retail, by

BUFFALO DENTAL MFG. CO.

## JACK SCREWS FOR REGULATING TEETH.

Old or new style, devised by Dr. C. S. LONGSTREET, with Dr. A. MCCOLLOM's Improved Head.

These devices are greatly prized by those who have used them.

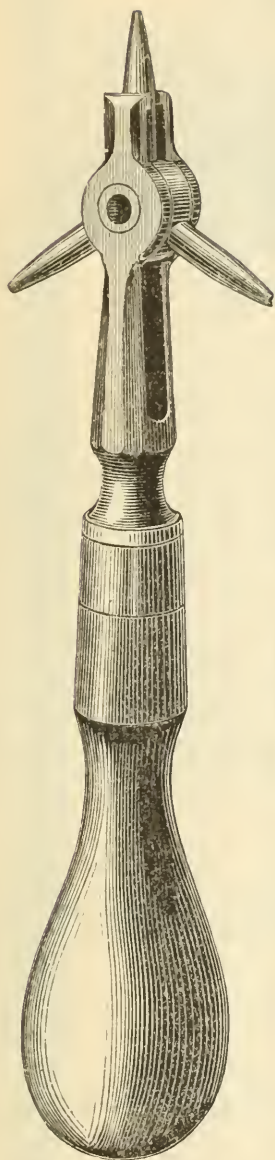
## PRICES.

Full set, Nickel Plated, screw and two extra bars, . . . . \$2.50

Jack Screw, Nickel Plated, . . . . . 1.50

Bars, Nickel Plated, each, . . . . . 50

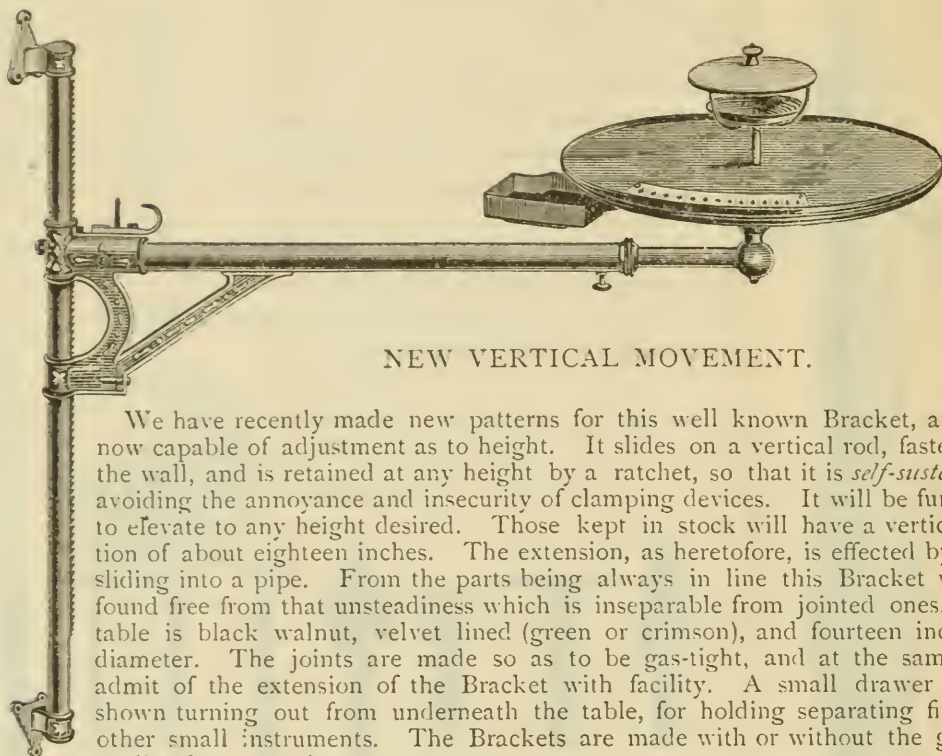
BUFFALO DENTAL MFG. CO.



B. D. M. CO.  
BUFFALO.

## THE SNOW AND LEWIS EXTENSION BRACKET

WITH GAS ANNEALING LAMP ATTACHMENT.



## NEW VERTICAL MOVEMENT.

We have recently made new patterns for this well known Bracket, and it is now capable of adjustment as to height. It slides on a vertical rod, fastened to the wall, and is retained at any height by a ratchet, so that it is *self-sustaining*, avoiding the annoyance and insecurity of clamping devices. It will be furnished to elevate to any height desired. Those kept in stock will have a vertical motion of about eighteen inches. The extension, as heretofore, is effected by a rod sliding into a pipe. From the parts being always in line this Bracket will be found free from that unsteadiness which is inseparable from jointed ones. The table is black walnut, velvet lined (green or crimson), and fourteen inches in diameter. The joints are made so as to be gas-tight, and at the same time admit of the extension of the Bracket with facility. A small drawer is also shown turning out from underneath the table, for holding separating files and other small instruments. The Brackets are made with or without the gas annealing lamp attachment.

## PRICES:

Snow & Lewis Bracket,	with Gas Annealing Lamp Attachment,	Bronzed,	\$20.00
"	"	" with Gas Annealing Lamp Attachment,	Nickel Pla. 24.00
"	"	Bronzed, including table,	14.00
"	"	Nickel Plated, "	17.00
"	"	with Table 18 inches diameter, extra,	1.00
"	"	without Table, less,	2.00
Drawer for Table, extra,			60

BUFFALO DENTAL MFG. CO.

B. D. M. CO.  
BUFFALO.

## NEW ANNEALING LAMP TRAYS.

We offer a new Annealing Lamp Tray of German Silver to the profession as being an improvement on the plain tray, heretofore manufactured. Shallow pits are swaged in the plate to prevent the pellets of gold from coming in contact while operating. They are of the same size as the Russia iron tray furnished with all our annealing lamps.

## PRICE:

German Silver Annealing Lamp Tray, . . . . . 50 cents.

BUFFALO DENTAL MFG. CO.

## THE STEVENS MALLET.

MANUFACTURED BY, AND UNDER PATENTS  
OWNED BY, THE

BUFFALO DENTAL MFG. CO.

This Mallet has a hand-piece five inches in length and nearly three-eighths of an inch in diameter, which is surmounted by an arm supporting the mechanism for giving and regulating the blow.

The tool-holder is extended through the entire length of the case, and projects far enough to receive the direct blow of the hammer. The different grades of blows are obtained by means of a regulating screw beneath the arm.

The tool-holder can be locked by means of the ring on the handle, thus rendering it a hand instrument.

This Mallet is claimed, by the inventor, to produce blows similar to the hand mallet.

The points of the Snow & Lewis Automatic Plugger fit this mallet.

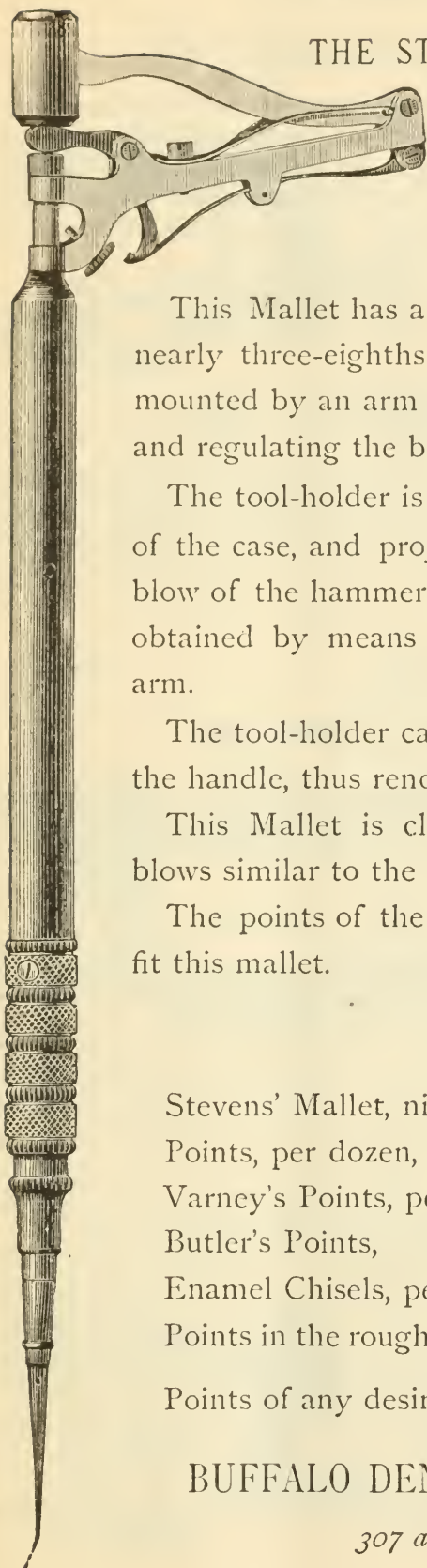
## PRICES:

Stevens' Mallet, nickel plated,	\$15.00
Points, per dozen,	4.50
Varney's Points, per set of 13,	7.00
Butler's Points, " 16,	6.00
Enamel Chisels, per set,	2.25
Points in the rough, fitted to socket, per doz.,	2.00

Points of any desired pattern furnished to order.

BUFFALO DENTAL MANUFACTURING CO.,

307 and 309 Main Street, BUFFALO, N. Y.



B. D. M. CO.  
BUFFALO.

## CUPS FOR EXCAVATORS, PLUGGERS, ETC.



These cups are designed to be attached to our Extension Bracket, or to any Bracket or Table, for holding excavators, pluggers, files, etc. They will be found one of the most convenient attachments to a table yet produced. They are secured by means of the ring illustrated. They are made from well seasoned black walnut, and highly polished.

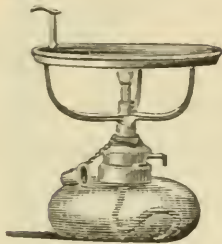


## PRICES.

Excavator Cup, each,	\$0 50
Japanned Ring, each,	0 10

B. D. M. CO.  
BUFFALO.

## THE WHITNEY ANNEALING LAMP.



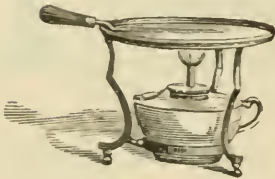
This is a glass lamp, with a thumb piece for adjusting the size of the flame. The brass frame which holds the tray is removable, and also fits the Laboratory Gas Burner, enabling the Dentist to use either Alcohol or Gas. Diameter of Tray, 4 inches. Height of Lamp,  $3\frac{3}{4}$  inches.

## PRICE.

Whitney Annealing Lamp,	\$2 50
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B. D. M. CO.  
BUFFALO.

## THE LEWIS ANNEALING LAMP.



This consists of a brass ornamental tripod  $3\frac{1}{4}$  inches high, holding a tray 4 inches in diameter, with Britannia Lamp.

## PRICES.

Lewis Annealing Lamp,	\$2 50
Lewis Annealing Lamp, Silver Plated,	4 00

## NOTICE TO DEALERS AND DENTISTS.

Latterly it has become the habit of some dealers, who are also manufacturers, to order Vulcanizers *less* heating apparatus, *less* flasks, or *less* anything that they can supply at a cheaper rate, and, consequently, of a poorer quality. Vulcanizers have been sold that would not have been known as of our manufacture; and often we find that the covers and boilers fitted together carefully by us, and properly numbered, have been separated, and put together promiscuously: some fitting too tight, others too loose, and the dentist who gets such always charge, what they take to be bad workmanship, back upon us.

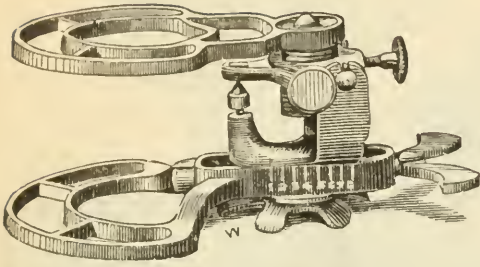
To remedy this evil, we propose hereafter to sell all of our Vulcanizers *complete*. After this date we shall pay no attention to any order that fails to give a good reason for wishing to procure *parts* of Vulcanizers, and then we shall only deduct the cost of manufacturing such omitted parts. If it be heating apparatus, we shall deduct the cost of the gas heater. When these parts are sold separately, they will be charged at fair prices in proportion to the cost of each; but when sold with a Vulcanizer *complete*, either kind, gas, alcohol, or kerosene, will be furnished as desired, at the regular advertised rates. For the Union Stove there will be charged, as heretofore, \$1.25 extra.

BUFFALO, July 1, 1874.

BUFFALO DENTAL MANUF'G CO.

B. D. M. CO.  
BUFFALO.

## THE HAYES ARTICULATOR.



Many dentists have felt the want of an Articulator with which all the motions of the jaws could be represented, and with which their relative position could again be brought back at pleasure to the starting point. This instrument is capable of doing this.

The screw hinge admits of lateral motion. The set screw on the side plays into a slot securing one central position, to which it can

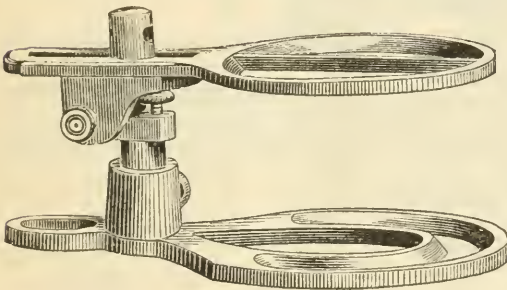
at all times, when desired, be brought back. The long screw in the foot produces back and forward motion, the main hinge up and down motion; and the large nut on the bottom renders all the parts taut and unyielding. The construction of the hinge is such, that the halves of the Articulator, when open at right angles, can be separated by a slight lateral motion.

## PRICE.

Hayes Articulator, . . . . . \$2 50

B. D. M. CO.  
BUFFALO.

## THE SNOW &amp; LEWIS ARTICULATOR.



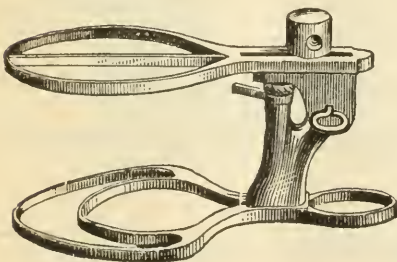
This Articulator has been greatly improved since first manufactured, and is now all that could be desired; combining strength and durability. One decided advantage over common Articulators is, its capability of being nicely adjusted to any thickness of cast by means of a hollow post and set screw.

## PRICE.

Snow & Lewis Articulator, . . . . . \$2 00

B. D. M. CO.  
BUFFALO.

## B. D. M. CO.'S COMMON ARTICULATOR.



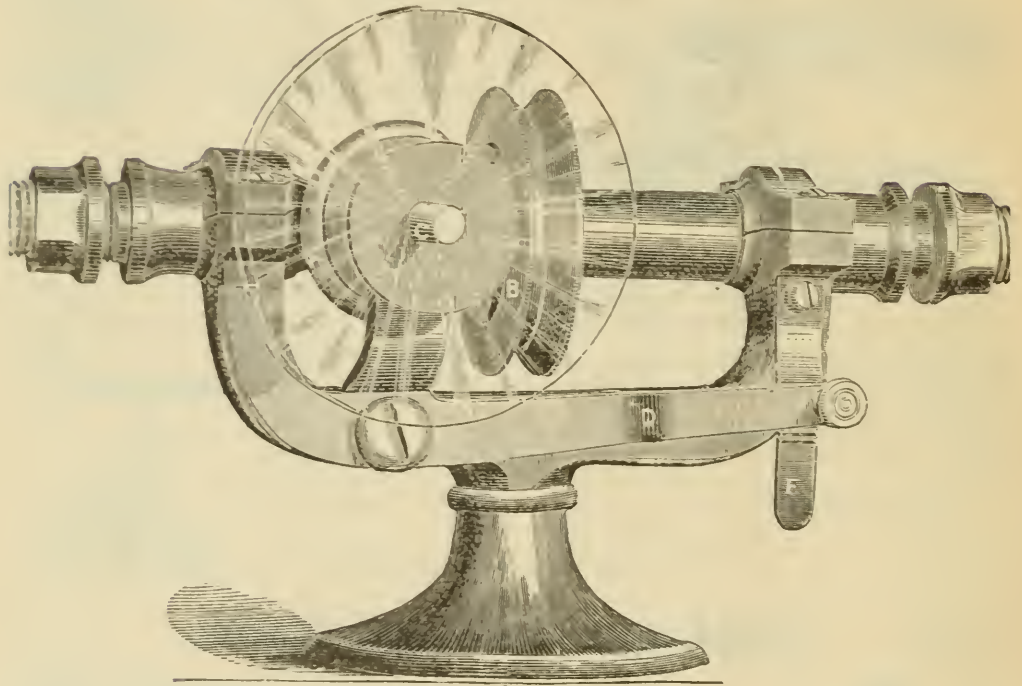
The B. D. M. Co. offer the Articulator illustrated, to dentists desiring a cheap article, in the belief that it possesses some advantages over other patterns of the same price. The adjusting screw is fastened by a jam-nut, which renders it secure against any alteration by handling.

## PRICE.

B. D. M. Co.'s Common Articulator, . . . \$1 00

Y. N. B.  
BUFFALO

B. D. M. CO.'S LATHE HEAD,  
WITH THE LEWIS FACING WHEEL ATTACHMENT.



The cut represents the central portion of the lathe head (the extreme end being omitted), with the Lewis Facing Wheel Attachment, which carries a corundum wheel (shown in shading at C) for finishing the joints of section teeth. It revolves at a right angle with the arbor, the motion being communicated by the friction wheel A, which can be brought against or removed from the pulley B, by the lever D. The spring catch E holds it in any position required. The wheel may thus remain stationary, except when in actual use, when it is put in motion by depressing the lever D.

PRICES:

B. D. M. Co.'s Lathe Head,	\$10 00
“ “ “ “ with the Lewis Attachment,	15 00

## NOTICE.

As there are imitations of our goods constantly put in the market by unprincipled parties, causing great annoyance both to ourselves and the purchasers, by their worthlessness, we again call attention to the fact that

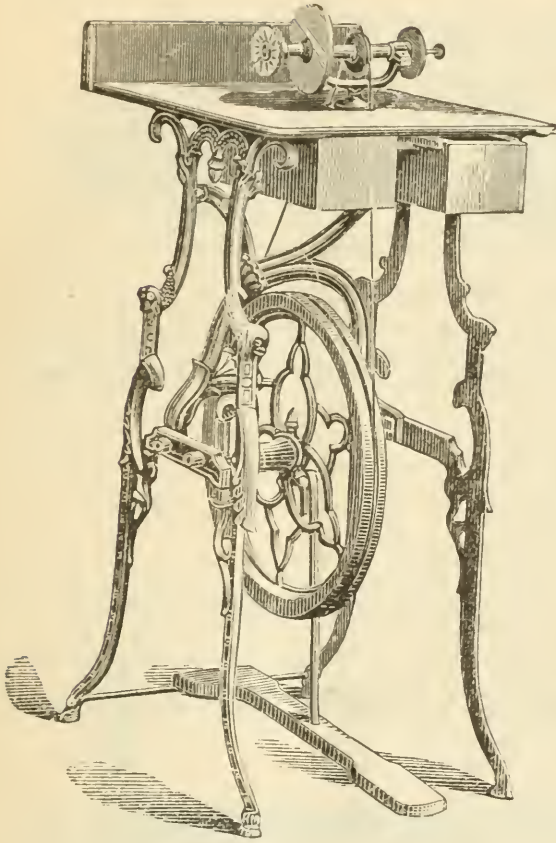
All articles of our Manufacture are stamped B. D. M. CO.

Purchasers wishing any of our specialties will do well to refuse any article not so stamped.

BUFFALO DENTAL MANFG. CO.

B. D. M. CO.  
BUFFALO.

## B. D. M. CO.'S EMPIRE LATHE.



The frame is of iron, and with the fly-wheel and brace is elaborately carved. Although in appearance apparently light, yet the material is so distributed as to give it the greatest possible rigidity and strength. The treadle being hung at the back, exerts greater power on the crank, and brings the work upon the hip instead of the ankle, making it much easier for the operator.

The lathe head consists of a cast-iron standard and a cast-steel arbor, highly finished, forming one of the best combinations of wearing surfaces for light work that is known. On each end of the arbor is a clamp nut for large wheels; also a rocket for the reception of chucks for small wheels and brushes; these are retained by a slotted screw-cap which fastens them securely, while at the same time they can be instantly removed by giving the cap half a turn.

The lathe is provided with two drawers of sufficient capacity to contain the necessary grinding and polishing wheels.

Any lathe head in the market can be attached to this frame.

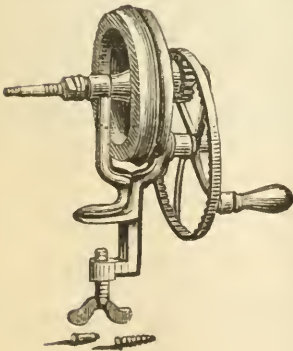
## PRICES.

B. D. M. Co.'s Empire Lathe, complete,	\$35.00
“ “ “ with the Lewis Facing Wheel Attachment,	40.00
“ “ Lathe Head,	10.00
“ “ “ with the Lewis Facing Wheel Attachment,	15 00

B. D. M. CO.  
BUFFALO.

## SKELETON HAND LATHE.

MANUFACTURED BY THE B. D. M. CO.



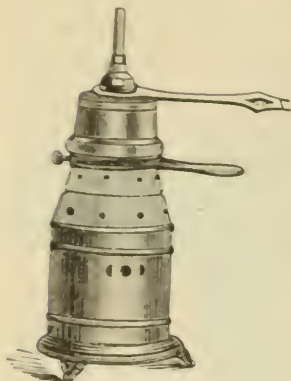
This grinding apparatus has been improved by the addition of a fly-wheel, giving it strength and steadiness of motion. It is furnished with one screw chuck for brushes and one for corundum wheels. Extra chucks furnished if required.

## PRICES.

Skeleton Lathe,	\$4 50
Extra Chucks,	25

B. D. M. CO.  
BUFFALO

## THE WOODARD VULCANIZER.

*Patented Jan. 16th, 1866, and assigned to B. D. M. Co.*

This was the first Vulcanizer invented which closed the Flasks inside the steam chamber while under pressure of live steam. It is done by means of a piston moving inside the steam chamber in which the rubber is vulcanized. A stirrup passes under the Flasks which engage above with a permanent stop, so that when the piston rises, the whole force of steam inside the Vulcanizer is made to operate in closing the Flask and compressing the rubber while in its most plastic condition.

## PRICE.

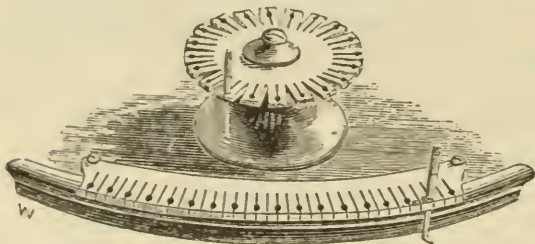
With Flasks and Heating Apparatus, . . . . . \$24.00

*Manufactured only by*

BUFFALO DENTAL MANUFACTURING CO.

B. D. M. CO.  
BUFFALO.

## THE HAYES AUTOMATIC PLUGGER POINT RACK.

*PATENTED NOV. 11, 1873.*

This new Automatic Plugger Rack consists of a series of spring jaws, either steel or hardened brass, between which the point is placed and pressed till a blow of the plugger drives it in so firmly that the handle can be unscrewed, leaving the point securely grasped between the jaws till wanted again.

To insert a point, the plugger is placed on the one selected, and then the same rolling motion which screws it on, instantly loosens the point from the jaws, leaving it as firmly screwed into the plugger as it was previously grasped by the jaws.

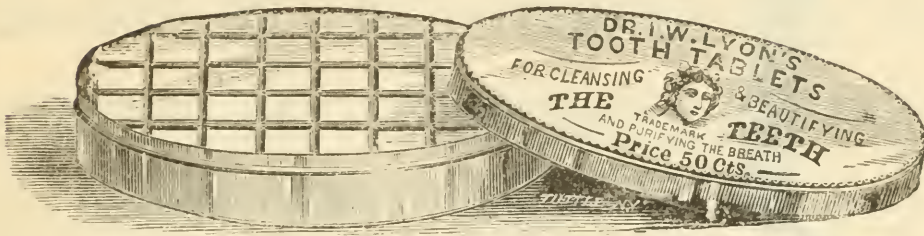
This rack operates equally well with any of the points in market, whether with holes or flattened sides, or without either. It brings the points fairly into view for selection, and they are held there so firmly that no ordinary blow or jar can throw them out of place.

Two styles of the rack are illustrated. One to be screwed on to the edge of our round bracket table; the other, a circular rack which turns upon its stand. We have a sliding rack which can be pushed back under the table when not in use; and another straight, to be screwed on to, or under, the edge of any square table. All of these racks are polished and nickel plated. All Plugger Point Racks heretofore made by us have been withdrawn from market.

## PRICES.

Drawer Rack,	\$3 50
Circular Rack,	3 00
Curved Rack,	2 50
Straight Rack,	2 00
Morocco Case, with Rack,	3 50

# DR. I. W. LYON'S TOOTH TABLETS.



## NOTICE—CHANGE OF BOX.

I have dispensed with the pasteboard box formerly used in putting up the Tablets, in consequence of its liability to breakage, and have substituted a **SEAMLESS METALLIC BOX**, which is impervious to air and moisture, and may be carried on a journey without danger of breaking, thereby preserving the Tablets perfectly.

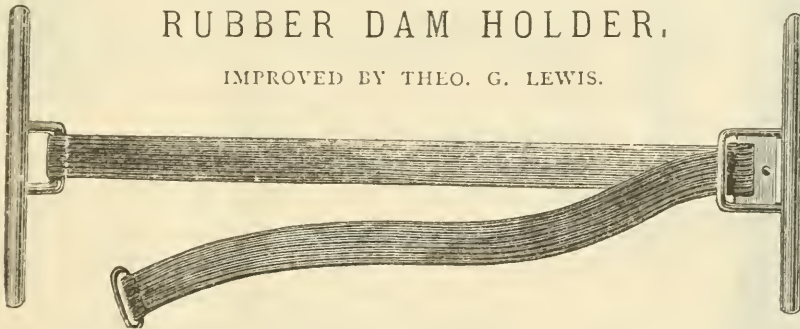
Confident that the change will be duly appreciated by the patrons of LYON'S TOOTH TABLETS, I am respectfully,

I. W. LYON, D. D. S., Proprietor,  
36 VESEY STREET, NEW YORK.

SOLD BY DRUGGISTS AND DENTISTS GENERALLY, AND AT THE DENTAL DEPOTS.

## RUBBER DAM HOLDER.

IMPROVED BY THEO. G. LEWIS.



This is a device for holding the rubber dam in position while operating. It is much more effective than the ordinary Rubber Dam Holder. The rubber being smoothly stretched over the patient's lips and cheeks, is therefore entirely out of the way of the operator. The Holder is secured to the Rubber by simply being stretched over the ends of the bars, and is held in place by its own contraction.

The improvement consists in a slotted slide, through which the braid passes, enabling the operator to produce tension by drawing on the free end of the braid, or to relieve the strain by pushing the slide back with the thumb nail.

### PRICE.

Rubber Dam Holder, Nickel-plated, . . . . . 75 cents.

BUFFALO DENTAL MANUFACTURING CO.

## ORANGE WOOD.

We have a fresh stock of Orange Wood, superior quality. Price, per bundle, 10 cents.

BUFFALO DENTAL MANUFACTURING CO.

## THE SOUTHWICK SEPARATING AND FINISHING FILE

PATENT PENDING.

These files are intended for finishing as well as separating instruments, for the approximal surfaces of bicuspid and molars. They are furnished with a handle of sufficient size to be fully under the control of the operator. The shank is polished and bent in a manner to protect the corners of the mouth from injury, at the same time the blade is in a horizontal position, and can be used without wounding the gum. They are made in sets of four (safe sided). The cut shows the file full size. They have been in constant use for a year past, and have fully met the expectations of the designer and all that have been able to obtain them.

PRICE.

Southwick Files, per set of four, . . . . . \$2.00

BUFFALO DENTAL MFG. CO.

## RUBBER DAM.

INVENTION OF DR. S. C. BARNUM.

We constantly keep in stock an excellent quality of this article, now a necessity in Dental practice. This we offer in large or small quantity.

PRICES:

Thin, per yard, . . . . .	\$2.50
Medium, " . . . . .	3.00
Thick, " . . . . .	3.50

A liberal discount to the trade.

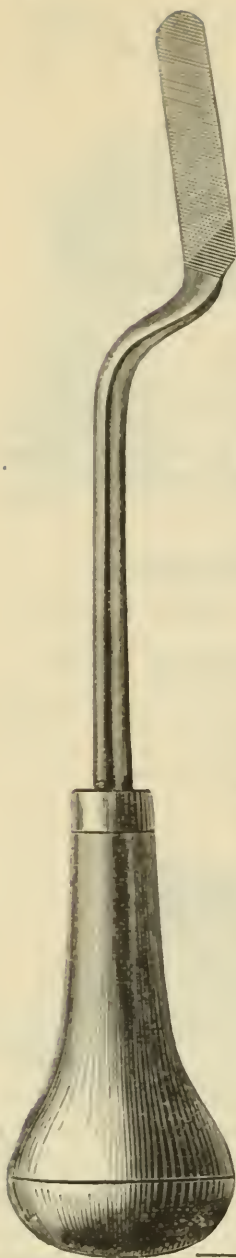
BUFFALO DENTAL MFG. CO.

## CELLULOID BLANKS.

A full stock of celluloid blanks at the following prices:

Full Plates, upper or lower, each, . . . . .	\$0.60
Partial Plates, each, . . . . .	30

BUFFALO DENTAL MFG. CO.



## PURE GOLD FOIL,

MANUFACTURED BY

J. M. NEY & COMPANY,  
HARTFORD, CONN.

SOFT, TOUGH AND MALLEABLE.

Can be made as ADHESIVE as desired by re-annealing.

Receives our personal attention in refining.

*For sale at all Dental Depots, and by Buffalo Dental Manufacturing Co.*

## FLETCHER'S AMALGAMS.

## FLETCHER'S ARTIFICIAL DENTINE.

## FLETCHER'S WHITE ENAMEL.

The trade supplied with the above preparations, at liberal rates.

BUFFALO DENTAL MANUFACTURING CO.

B. D. M. Co.  
BUFFALO

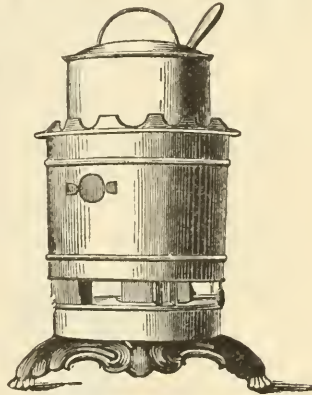
## UNION KEROSENE STOVE.

FOR VULCANIZING, HEATING WATER, ETC.



No. 1 Stove.

When Kerosene is to be used as a means for heating the Vulcanizer, or for general Laboratory purposes, the "UNION KEROSENE STOVE" is decidedly the best constructed burner in use, the most easily managed and perfectly safe. It is made of different sizes, from No. 1 to No. 5, the numbers denoting the number of burners. The price advances one dollar for each size above No. 2. The No. 1 has been used with the Whitney Vulcanizer for Kerosene since 1865, and has given universal satisfaction. It is now sent out also with the Hayes Boiler, unless otherwise especially ordered. It is not adapted to the Hayes Oven.



No. 2 Stove.

The No. 2 is adapted to the large size Vulcanizer. Furniture for broiling, baking, heating flat irons, etc., is made for Nos. 4 and 8.

The cut represents a stew pan for heating water, which is adapted equally well to either size stove.

## PRICES.

No. 1, Kerosene Stove, . . . . .	\$2.50
Jacket for Vulcanizer, extra, . . . . .	.25
No. 2, Kerosene Stove, . . . . .	3.00
Jacket for Vulcanizer, extra, . . . . .	.40

## WATERS' DENTAL REGISTER.

Give it a trial and you will never be without it.

Large size, 2,400 entries, . . . . .	\$6.50
Half size, 1,200 entries, . . . . .	3.50

For sale by the B. D. M. Co. The trade supplied.

## THE DEPURATOR.

This instrument, designed for cupping the gums for the *radical cure* of  
**ALVEOLAR ABSCESS,**  
 is endorsed by some of our leading practitioners as another indispensable article to cheer on the dentist in his work of mercy.

Instead of doctoring the tooth and gum for an indefinite period, and then extract or drill out the filling, a **CURE IS GENERALLY EFFECTED** by a few applications of this instrument. Circulars reporting cases, and directions, sent on application. Price of instrument \$8.00. For sale by most dealers, or apply direct to

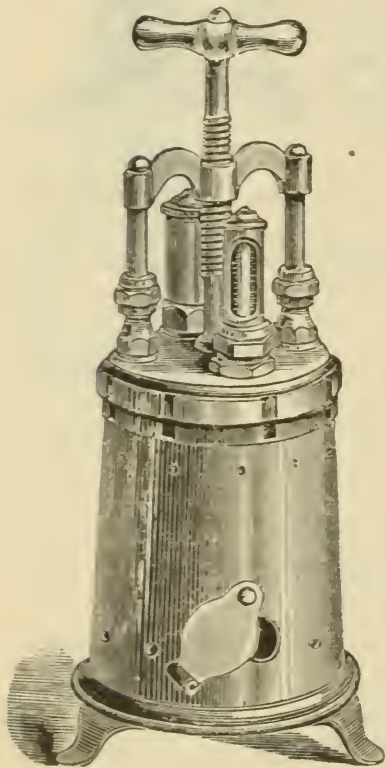
Oct 75-1y

JOHN D. WINGATE, D. D. S., CARBONDALE, PA.

## EDSON'S IMPROVED VULCANIZING & CELLULOID APPARATUS COMBINED.

*Patented by H. M. Edson, May 25, 1875.*

B. D. M. CO.  
 BUFFALO, N. Y.



Desirous of keeping the profession supplied with all improvements in vulcanizing apparatus, we have made arrangements to supply the improved

### EDSON VULCANIZER AND CELLULOID APPARATUS,

as shown in the annexed cut.

The flasks are closed inside the boiler after steam has been generated therein, by means of a screw and cross bar, which operate a clamping apparatus.

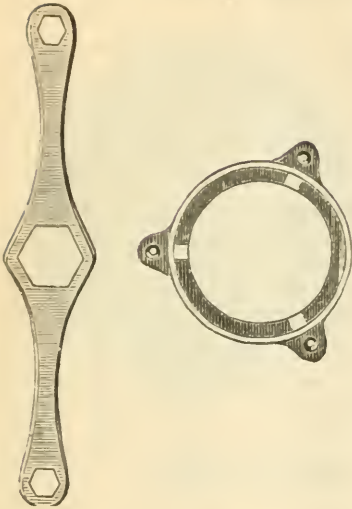
The apparatus is provided with a mercury bath thermometer and a weighted safety valve.

#### PRICE.

Edson's Vulcanizing and Celluloid  
 Apparatus, complete, . . . . . \$25.00  
 BUFFALO DENTAL MFG. CO.

B. D. M. CO.  
BUFFALO.

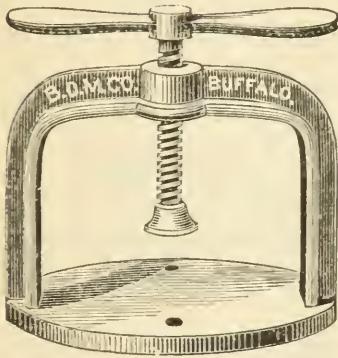
## B. D. M. CO'S BED PLATE AND WRENCH.



This device is recommended to dentists as a substitute for the ordinary wrench, for opening and closing the Whitney Vulcanizer. The bed plate, or ring, is to be fastened on the bench, a hole being cut to enable it to receive the Vulcanizer. A *very moderate* degree of force is all that is necessary to render the steam-joint perfectly tight, if the packing is in good order. It will be substituted for the ordinary wrenches sent with Vulcanizers, when desired. Both pieces are of malleable iron.

## PRICES.

Bed Plate . . . . .	\$0.25
Wrench . . . . .	0 50

B. D. M. CO.  
BUFFALO.

## FLASK PRESS.

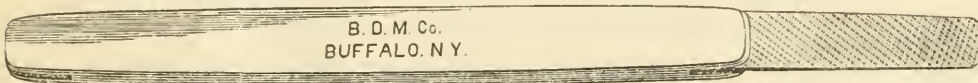
For closing flasks after packing. It is strong and well made, and will effect considerable saving in bolts and screws.

## PRICE.

Flask Press, . . . . .	\$2 00
------------------------	--------

B. D. M. CO.  
BUFFALO.

## FILE CARRIER.



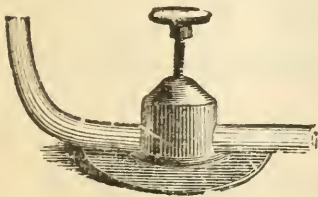
This article—shown full size—is intended as a file carrier for broken separating files, they being cemented in with shellac at either end or any angle.

## PRICE.

German Silver File Carrier, . . . . .	50 cents.
---------------------------------------	-----------

B. D. M. CO.  
BUFFALO.

## GAS CUT-OFF.



For regulating the flow of gas while vulcanizing. The thumb screw compresses a piece of rubber tubing, which runs from the gas pipe to the burner.

## PRICE.

Gas Cut-Off . . . . .	\$0.40
-----------------------	--------

# FLETCHER'S FILLING MATERIALS.

The value of these materials is sufficiently proved by the steady and rapid increase in the demand and by the numerous and entirely unsolicited testimonials which are constantly coming to hand from various quarters. This is doubtless due, in a great measure, to the fact (well known to most Dentists) that no sample is ever allowed to leave the laboratory which does not fully, and in every detail, fulfill the test appointed for it, which is in each case amply severe. This system of testing is, and will continue to be, scrupulously adhered to. FLETCHER'S AMALGAMS are offered to American Dentists with the greatest confidence, as possessing all the desirable qualities of metallic fillings in a degree which cannot be claimed for any others in the market.

## FLETCHER'S PLATINUM AMALGAM.

(PLATINUM AND GOLD ALLOY.)

This, as now improved, is CLEAN TO MIX IN THE HAND, the one objection to its use having been at last remedied without interfering in the slightest degree with any of its other well-known properties.

*At the Dental Depots—Price in gold \$4.80 per ounce, in ounce and half-ounce packets.*

## FLETCHER'S EXTRA PLASTIC AMALGAM

For contour plugs and cavities difficult of access in fragile teeth. This, like the Platinum Amalgam (of which it is a modification), now packs well entirely under water, if used with a small proportion of mercury. It is largely used in conjunction with the *Artificial Dentine* for the apparently most hopeless cases.

*At the Dental Depots—Price in gold \$5.00 per ounce, in ounce and half-ounce packets.*

## FLETCHER'S ARTIFICIAL DENTINE.

*Similar to an ordinary oxy-chloride, but without free acid.*

As now made SETS SUFFICIENTLY HARD TO PACK A GOLD PLUG OVER IT WITHOUT INJURY. It will be found in practice one of the most satisfactory nerve cappings which has ever been introduced.

*At the Dental Depots—Price in gold \$1.40 per packet.*

## FLETCHER'S WHITE ENAMEL

Has been recently improved, and not only sets extremely hard in the mouth, but is beyond comparison the most insoluble of any of the oxy-chlorides yet known.

*At the Dental Depots—Price in gold \$2.00 per packet.*

THOS. FLETCHER, F. C. S.,

MUSEUM STREET, WARRINGTON, ENGLAND.

Address in United States :

JAMES V. LEWIS,

No. 5 South Division Street, Buffalo, N. Y.

## FIRST MEDAL FOR ARTIFICIAL TEETH.



VIENNA--1873.

AWARDED TO

**H. D. JUSTI,**



No. 516 Arch Street, Philadelphia,

AND

No. 66 East Madison Street, Chicago.

The only American Manufacturer of

# ARTIFICIAL TEETH

To whom, after careful examination and comparison,

**THE FIRST MEDAL FOR ARTIFICIAL TEETH**

has been awarded by the International Jury,

**AT VIENNA, IN 1873.**

(This assertion we are now prepared to substantiate by Official Documents.)

For their strength, natural forms, and soft, mellow colors, our Teeth are now in advance of those of any other maker, and we challenge a critical comparison with any other make of Teeth whatever.

Sole Manufacturer of the

*STAR SECTIONS, AND ALL KINDS OF ARTIFICIAL TEETH, AND OF*

## DENTAL INSTRUMENTS,

Dealer in all kinds of Gold Foils, Amalgams, etc., and Dental Goods and Furnitures of every Description

Sole Agent for

## THE NEW GERMAN CEMENT,

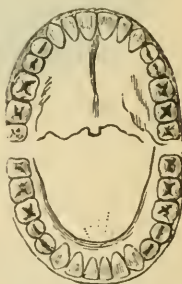
Pronounced by those using it, to be far superior to any Cement Filling in the market.

Price per box, \$3.00.

# THE DENTIST'S APPOINTMENT BOOK AND POCKET RECORD,

FRIDAY, .....

187 .

Time.	NAME.	OPERATION	Amount.	RECORD.
				

Of which the above is a sample of one day, contains fifty-two weeks, and is so arranged that it may be commenced at any time—then the days and weeks will come right for a full year—leaving out Sundays. The first blank column, headed “time,” is for inserting the hours of appointments. The next is for the “names,” and, if necessary, the addresses of appointees. The next for the kind of “operations” performed, or to be performed; then one for the fees, in dollars and cents, and the last, a diagram of the mouth, on which to “record” the exact places of the operations. Where several operations are recorded in one diagram, draw a fine line from the point indicated to the margin, and mark on it the hour opposite the patient’s name.

When examinations are made previous to appointments, it will be found very convenient to make a record of them, so that when the patient presents himself for operations or treatment, a reference to the “record” will render another examination unnecessary, thus saving much time. Believing that this little “Appointment Book and Pocket Record” contains more labor-saving conveniences for the Dentist, in a more complete and simple form, than any other extant, I offer it to my fellows in dental practice, hoping their professional labors may be made more pleasant by its use.

*Price, printed in Carmine, \$1.50. Liberal Discount to the trade.*

PUBLISHED AND FOR SALE BY

E. S. HOLMES, D. D. S., Grand Rapids, Mich.

ja76-1y.

*For Sale by Buffalo Dental Manufacturing Co.*

SOFT GOLD FOIL AND ROLLED GOLD A SPECIALTY.

---

JAS. H. ASHMEAD & SON,

MANUFACTURERS OF

GOLD FOIL, TIN FOIL,  
AND AMALGAM.

DEALERS IN DENTISTS' MATERIALS,  
HARTFORD, CONN.

---

TEETH.

PORCELAIN TEETH.

TEETH.

We have a large stock of Porcelain Teeth, comprising those of all the principal manufacturers in the country, the whole forming a more complete and LARGER ASSORTMENT than kept by any other house.

Dentists will find it to their advantage to order from us.

All new instruments and appliances in stock as soon as issued.

BUFFALO DENTAL MFG. CO.

JOHN BIDDLE,


MANUFACTURER OF


DENTAL INSTRUMENTS

OF EVERY DESCRIPTION,

WHOLESALE AND RETAIL,

207 CENTER STREET, between Howard and Grand, - NEW YORK.

 Orders filled for all kinds Dental Goods.

 Instruments repaired in the best manner and at the shortest notice.

All Instruments manufactured by John Biddle for sale by B. D. M. Co.

[ja76-ry]

B. D. M. CO.  
BUFFALO.

TRADE-MARK FOR THERMOMETER TUBES.

FOR VULCANIZERS.

The great quantity of unreliable thermometer tubes furnished us by different parties induced an investigation to ascertain, if possible, the cause, and we are glad to say it has resulted in an improvement both in the quality of the material used and the manner of production; and, as a mark of distinction

*TO PROTECT THE TRADE AND THE DENTAL PROFESSION*

from imposition, we have caused a trade-mark to be registered in the Patent Office. This consists of a

RED STRIPE

extending along the back of the white ground commonly employed in the thermometer tubes. It is formed in the tubes in the same manner as the white ground itself.

Hereafter all of our tubes will have this mark in the glass, and all the scales will have the initials of the B. D. M. Co. stamped on the face. Without each of these, any tubes may be declared spurious, and probably worthless. Any imitation of these tubes will be in violation of law, and all such parties will be held responsible.

BUFFALO DENTAL MANUFACTURING CO.

## R. S. WILLIAMS,

MANUFACTURER OF

## COHESIVE GOLD FOIL,

Nos. 2, 3, 4, 5, 6 and higher Nos. to Order.

## MEDIUM GOLD FOIL,

Nos. 4, 5 and 6.

## SOFT GOLD FOIL,

Nos. 4, 5 and 6.

## CORRUGATED GOLD FOIL,

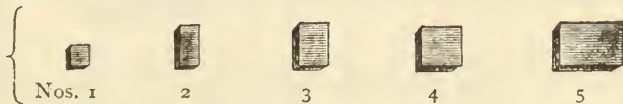
Nos. 4, 5 and 6.

*Crystal Surface Gold, Rolled, Nos. 30, 40, 60 and 120.*

## GOLD CYLINDERS.

STYLE A—Loose, and  
can be used as Pellets.STYLE B—Compact,  
but not hard. Used as  
Cylinders only.STYLE C—Loose, but  
more compact than  
STYLE A.These are made almost  
entirely from Plain Foil.

## RECTANGULAR GOLD PELLETS.

Thickness A made from No. 4 Foil.  
" B " " 3 "

## TIN CYLINDERS AND TIN FOIL.

All kinds of Dental Materials kept in Stock.

907 BROADWAY,

NEW YORK.

## LAWRENCE'S AMALGAM.

---

This Amalgam was invented by DR. AMBROSE LAWRENCE, formerly of Lowell, Mass., in 1847, and has been used by him and many others since, with entire satisfaction. The metals of which it is composed are combined in such proportions as, after many experiments, have been found to afford the best results; and the fact that for many years it has received the favor of almost the entire Dental Profession in this country, and, to a large extent, in foreign countries, also, renders any labored praise of its qualities unnecessary.

Its reputation is already established; a result of its working qualities, apparent in the fact that it makes a very uniform paste,—so tenacious that it can be readily adapted to the most difficult or irregular cavities,—that from its great density it is not permeable to the fluids of the mouth, and will neither crumble nor wear away in mastication.

### *Lawrence's Amalgam does not contract in hardening.*

Fillings of this Amalgam, some days after being introduced, have been subjected to the severe test of one thousand pounds, or 66 4-15 atmospheres, per square inch, in the effort to force a tincture of Iodine by, or through, the filling into a solution of Starch.

Every Chemist is aware that Starch is the most delicate known test for Iodine, its presence, even in very minute quantities, being indicated by the resultant beautiful BLUE Iodide.

In the experiment to which reference is made, not the slightest admixture of the two liquids took place. In view of the foregoing facts, I think the position I have always held, that my Amalgam DOES NOT contract in hardening, is fully sustained.

For want of space, I can refer to only a few of the many gentlemen who have witnessed the experiment, and kindly permitted the use of their names.

Prof. W. H. Atkinson, New York.

Dr. John Allen, New York.

" I. J. Wetherbee, Boston,

" Joseph E. Fisk, Salem, Mass.

Dr. C. C. Knowles, San Francisco.

" A. M. Dudley, Peabody, Mass.

Dr. Samuel Lawrence, Lowell, Mass.

---

*N. B.—Dealers, as well as Dentists, should bear in mind that my Amalgam is never sold in bulk, nor in any other than my LITHOGRAPHED ENVELOPES, with my MONOGRAM TRADE MARK on the lap.*

This caution becomes necessary in consequence of some unprincipled parties offering worthless amalgams, of their own make, using my name to insure a sale. No one has my recipe nor the right to use my name in the manufacture of amalgams. "A word to the wise is sufficient."

---

**Directions for using LAWRENCE'S AMALGAM accompany each Package.**

---

RETAIL PRICE, \$3.00 PER OUNCE.

FOR SALE AT ALL DENTAL DEPOTS AND BY THE PROPRIETOR,

DR. AMBROSE LAWRENCE,  
86 Chandler St., Boston, Mass.

Entered According to Act of Congress in the year 1863, by AMBROSE LAWRENCE, in the Clerk's Office of the District Court of the District of Massachusetts.

[uc75-1y]

*For Sale by Buffalo Dental Manufacturing Co.*

# HOLMES' STAR AMALGAM,

MANUFACTURED BY DR. A. M. HOLMES.

This article is offered to the profession with assurance of uniform purity, and as producing bright fillings of superior strength, which

## *WILL NOT OXIDIZE*

or shrink from the walls of the cavity.

The time required for hardening may be varied by the manner of preparing and manipulating the mass. Full directions accompany each package.

### *HOLMES' STAR AMALGAM—TWO GRADES.*

No. 1, per oz., Troy, . . . . .	\$3 00
No. 2, " " . . . . .	4 00

## TO DEALERS.

# HOLMES' STAR AMALGAM

SUPPLIED AT MANUFACTURER'S RATES.

*For sale by the Buffalo Dental Manufacturing Co.*

## EUGENE DOHERTY,

PROPRIETOR OF

# WILLIAMSBURG INDIA RUBBER WORKS.

MANUFACTURER OF

*DENTAL RUBBER, BLACK RUBBER,  
GUTTA PERCHA, STEAM PACKING, TUBING, &C.,  
444 First Street, Brooklyn, E. D., N. Y.*

I invite the special attention of the Dental Profession to my improved Rubber. I manufacture two kinds, No. 1, improved—No. 2, improved light color.

This improved Vulcanite Base packs easily, being durable and strong in texture, and not porous.

The number of years of practical experience and close attention given to this particular material, and the hearty approval which it has received from the Dental Profession, warrants me in recommending it as superior to any in use.

Dentists and experimenters are requested to give it a trial.

TO BE HAD AT ALL DENTAL DEPOTS THROUGHOUT THE STATES.

### *RETAIL PRICES.*

No. 1, . . . . .	\$2 75 per lb.
No. 2, . . . . .	2 75 "
Black Rubber, . . . . .	2 50 "
Vulcanite Gutta Percha, . . . . .	4 00 "
Gutta Percha, . . . . .	2 50 "

A LIBERAE DISCOUNT ALLOWED TO THE TRADE.

jy73-1y1

*For sale by the Buffalo Dental Manufacturing Co.*

O. S. BIXBY,  
 MANUFACTURER OF  
 ARTIFICIAL TEETH,  
 AND DEALERS IN  
 ALL KINDS OF DENTAL GOODS,

109 CEDAR ST., SYRACUSE, N. Y.

---

The most favorable testimonials that we have unexceptionably received from our Patrons in the Profession, as to the quality of our goods, encourage us to renew our claims to a share in their patronage. This we have endeavored to do by

LARGELY INCREASING OUR FACILITIES

*For the manufacture of Artificial Teeth.*

Teeth in quantities of Ten Sets or less, sent postpaid at the following prices, on receipt of Cash :

Gum, per Tooth, . . . . .	14 cts.
Plain, per Tooth, . . . . .	12 cts.

Discounts from the above prices in proportion to the amount of the order.

We parade no Medals and make no comparisons, but invite

THE ATTENTION OF DENTISTS

to the following inducements :

One Sample Set of 14 Teeth of our new designs, with new pins and new materials, will be sent to any Dentist on receipt of One Dollar and his address.

*For sale by Buffalo Dental Manufacturing Company, and all Dental Depots.*

[ja76-zy]

WM. VALLEAU, JR.  
MANUFACTURER OF  
CHEMICALLY PURE  
SOFT AND COHESIVE  
GOLD FOILS.  
A SURE CURE.



VALLEAU'S DENTAL FILLINGS—A SURE PREVENTIVE.

*E. G. & L. KEARSING'S Patented Prepared Gold Blocks,*  
" " " *Corrugated Gold Foil,*  
" " " *Shredded Gold,*  
" " " *Platina Blocks,*

WHOLESALE AND RETAIL.

NO. 306 BROOME ST., NEW YORK.

ESTABLISHED 1849.

*For Sale by the Buffalo Dental Manufacturing Co.*

# IF THE STERLING AMALGAM & RUBBER

IS NOT THE BEST MADE, WE WILL REFUND THE MONEY IN EVERY CASE.

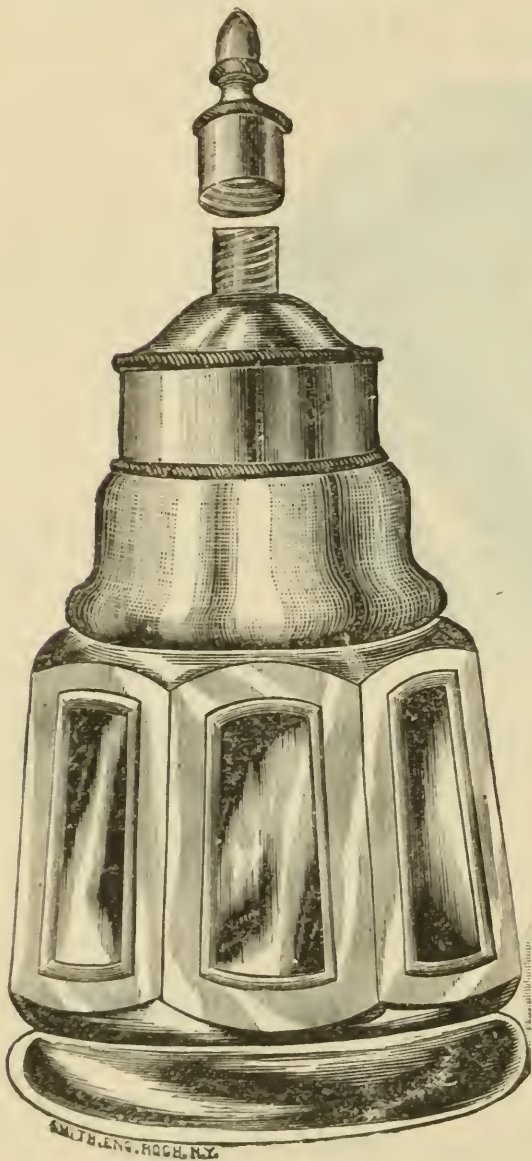
For all Cash Orders, we will send the Goods by Express or Mail, with charges prepaid.

## PRICES.

STERLING AMALGAM.	
One ounce Package, . . .	\$3.00
Two-third ounce Package, . . .	2.00
One-third ounce Package, . . .	1.00

STERLING RUBBER.	
Per Pound, . . . . .	\$3.50
Half Pound, . . . . .	1.75

*We can give nearly a thousand Recommends from Dentists in every State in the Union, endorsing and testifying to the high merits of the above, should any doubt their valuable qualities.*



DAVIS & LEYDEN'S

## Metallic Top Tooth Powder Jar.

This new Tooth Powder Jar is our own design, and of the most approved and beautiful pattern, with a double screw top, made of white metal, and fitted with cork joints, perfectly air tight.

The Jars are made of three different qualities of glass. No. 1 is a beautiful Pearl White. No. 2 is of first quality Flint Glass (very best made). No. 3 is second quality Flint Glass.

Nos. 1 and 2 are put up in neat boxes, with one half dozen in each box.

## PRICES. PER DOZEN.

No. 1, Pearl White, . . .	\$2.25
No. 2, first quality Flint Glass, . . .	2.00
No. 3, second " " " " " "	1.50

## OUR TOOTH POWDER

is of the finest quality (contains nothing injurious to the teeth), beautifully colored and perfumed, second to none, even those of a much higher price. We have reduced the price on this as follows:

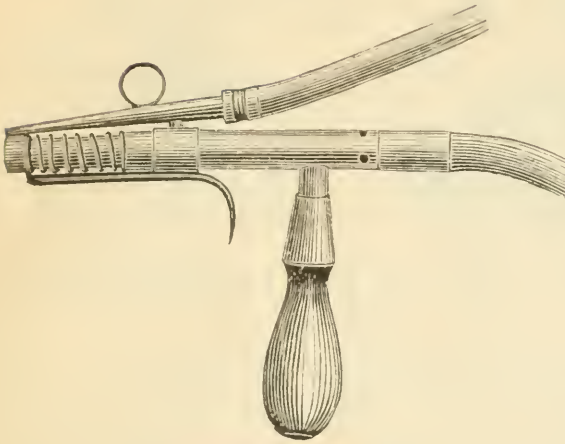
Single Pound, . . . . .	\$1.00
Packages of Five Pounds, . . . . .	4.00

DAVIS & LEYDEN,  
DENTAL DEPOT,  
ROCHESTER, N. Y.

The above are our Specialties. We keep constantly on hand **DENTAL GOODS** of all kinds used by the profession. In the line of **ARTIFICIAL TEETH** we have the largest Stock of all the principal makes of any single Dental Depot in the United States, which we are selling at the lowest wholesale and retail prices.

A. F. M. CO.  
BUFFALO.

## THE SNOW GAS BLOW PIPE.



The connection for both gas and air are made with rubber tubing, giving great facility in directing the flame. The gas mixes with air in its passage through the blow pipe and burns without smoke. Motion can be given to the air pipe by means of the trigger shown in the cut, and a pointed or "brush" flame obtained at will. There is a valve in the gas pipe, opening and closing automatically, which, when the blow pipe is hung up by its ring, will partially shut off the gas, allowing only sufficient to pass to keep alight. When the instrument is held in the proper position for use the passage of the gas is unobstructed.

PRICE.—Gas Blow Pipe, Nickel Plated, . . . . . \$4 00

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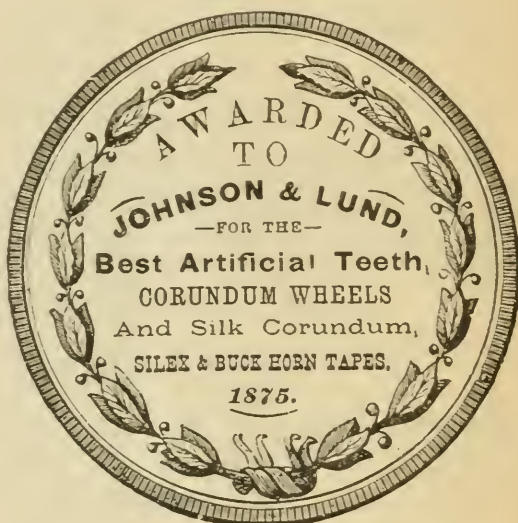
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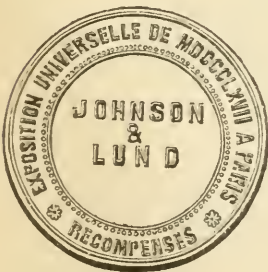
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